

THE NOR-WEST FARMER.

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in advance.



THE HORSE.

Conformation of the Horse.

(Continued from Page 233.)

THE EAR.

The characteristics of this organ depend upon its length, thickness, situation, direction and movements.

1. Length.—In judging the length of the

animal. This fact is so well known to horse dealers that they always trim the long hairs from the ears of horses offered for sale.

3. Situation — The distance of the ear from the median line depends partly upon the muscular development of the region, but still more upon the shape and size of the cranium. Hence the situation of the ear is an indication of the size of the cranium and a measure of the development of the brain, and consequently of the intelligence of the animal. Ears situated too high and close together have an unpleasant appearance, and often co-exist with a sulky or timid disposition.

4. Direction and Movements—The ear is ordinarily turned in the direction from from which sound is approaching, and the quickness with which these movements take place is an indication not only of the alertness of perception in the horse, but also of the energy of his muscles. A quick, active ear is characteristic of the well-bred ani-

ting on the bridle, etc. It is a condition even more unsightly than the foregoing one. Ears that are continually in motion, even when the animal is at rest in a quiet stable, indicate either blindness, defective vision, or a timid disposition. Finally, a defect to be avoided is the ear frequently laid back against the neck. It is the sign of a vicious temper and often the signal of a kicker.

Blemishes of the ear are quite frequent, the commonest being slits in the upper part of the concha. These are occasionally made by the owner as a means of identification, and Indian ponies are frequently disfigured in this way. Often, however, they result accidentally from contact with barbed wire fencing or other sharp objects. In this climate it is not unusual to see horses that have lost the tip or even the upper half of the ear from frost bite, the result of exposure in extremely cold weather. There is one blemish which should always attract the horseman's attention. It is a circular



Scene on the Ranch of J. D. McGregor, Brandon, Man.

ear we have no absolute guide, and must measure it in proportion to the length of the head, remembering that as the ear is part of the head, its length is added to that of the head, and in a horse with a long head a long ear adds to this defect. Long ears are characteristic of the mule and donkey and are unsightly appendages to the horse. Small ears diminish the apparent size of the head and render the physiognomy more pleasant and expressive.

2. Thickness—The thickness of the ear denotes the quality of the race and of the subject. When the skin of the concha is thick, and garnished on the inside with numerous long hairs, when the subcutaneous tissue is abundant and conceals the blood vessels and nerves, we have evidence that the subject is common and lymphatic. A small concha, firm, elastic, and covered by a skin soft and adherent, with fine and scanty hairs on the inside and blood vessels well outlined, characterizes a well-bred

animal with high-strung, nervous organization, while a slow, sluggish ear indicates the coarse-bred, lymphatic temperament. A motionless ear, unresponsive to sound, points to the condition of deafness.

The qualities to be looked for in the ear are the relative shortness, proper direction, situation and alertness, and a silky skin with few long hairs on the interior. The defects to be avoided are many, of which the following are the principal: The "lop ear" is long and carried in a more or less horizontal direction. When in addition to this defect the ear seems to be under no control and flops backward and forward at each step, the appearance of the animal is ruined. Sometimes only one ear is of this kind, while the other may keep a proper direction. When this is the case it is usually the result of injury to the muscles attached to the ear, and has been caused by some one having used the ear as a handle to control the head when the horse refuses to submit to some operation, such as put-

mark surrounding the base of the ear as a result of the brutal application of the twitch. Trifling as the blemish is in itself, it gives an indication that the horse has at one time been hard to control, and gives a hint that the animal may be difficult to shoe or to harness.

THE SUPRA-ORBITAL REGION.

This is a depression above the eye on each side of the forehead and only calls for brief mention. It is occupied by one of the muscles which closes the jaws in mastication. In young horses, and those in good condition, this hollow is well filled out, while in old and emaciated animals the hollow is very deep and pronounced. Unscrupulous dealers cover this defect in an old horse by an operation known in their parlance as "puffing the glims." It consists in making a puncture in the skin of the region and blowing in air until the part is distended to the proper extent. The fraud can be detected by passing the hand

over the part when the unnatural puffiness will be easily recognized.

THE NOSTRILS.

These external orifices of the air passages of the head or nasal fossæ are able to give us valuable indications of the health and development of the respiratory organs. They are of an irregular crescentic outline and are controlled by several muscles which regulate their size to suit the demand of the organism for air. The nostrils are covered with fine soft hair, which gradually disappears as the skin merges into the mucous membrane of the interior. Many long hairs are planted at intervals around the margin of the nostril. These are tactile organs akin to the "whiskers" of cats, and should never be removed. Inside the nostril the mucous membrane lining the air passages is seen, and from its color, etc., valuable indications of health or of disease are gained. It should be of a rosy pink color and free from scars or blemishes. The opening of the nostrils should be large, so as to ensure free passage of air to the lungs, and under severe exercise they should be widely distended. If, however, the nostrils are widely distended during very moderate exertion, there is something wrong with the respiratory organs, such as pulmonary emphysema or broken wind. Horses are unable to breathe through the mouth on account of the very long soft palate which they have, and, consequently, the size of the nostrils and the manner they are distended during work, are correct indications of the state of the respiratory organs, whether healthy and well developed, or diseased and insufficient.

In a state of health there is no discharge from the nostril, except occasionally a little clear watery fluid. Any deviation from this is a sign of disease which may be as trifling as a slight cold or as serious as that dreadful equine disease—glanders. Finally, the air which passes through the nostrils should make no sound. Anything of the nature of snoring, snuffling, wheezing, or roaring is caused by obstruction of the air passages and may indicate serious disease.

To sum up, the desirable characteristics of the nostril are:

1. It should be large and clear.
2. The mucous membrane lining a rosy pink.
3. Exhaled air is odorless.
4. Inspiration and expiration are noiseless.

(To be Continued.)

A Strange Companion.

A story is told of Edward Mayhew, the well-known surgeon, which well illustrates the argument that much can be effected by kindness which would otherwise be impossible of accomplishment. Mayhew was of middle age when he entered as a student at the Royal Veterinary College. His mind became confused by the new sort of companions encountered, by the novel objects which surrounded him, and by the strange kind of knowledge he was expected to master. The confusion was the greater because previous habits had not rendered him familiar with horseflesh. An animal, therefore, was needed so that reference might be made to its body for an explanation of the books which the pupil was expected to comprehend.

At length in the corner of a back yard was discovered a lonely loose box; inside there was a quadruped, and to this place the volume was daily taken with various morsels of bread or vegetables. Thus between reading, feeding, examining and carressing, many an afternoon was most pleasantly whiled away. More than a fortnight's leisure had thus been pleasantly occupied, when, as Mayhew was one afternoon stealing to the being which lightened the tedium

BREEDERS' DIRECTORY

CARDS under this head inserted at the rate of \$1.50 per line per year. No card accepted under two lines, nor for less than six months.

D. FRASER & SONS, Emerson, Man. Breeders and importers of Shorthorns, Shropshire and Southdown Sheep. Pedigree Poland China Pigs a specialty, from the best strains in the United States.

W. J. HELLIWELL, Oak Lake, breeder of Shorthorn Cattle, Shropshire Sheep, Barred Plymouth Rocks, Light Brahmas and Partridge Cochins. All kinds of above young stock for sale. Prices right.

R. L. LANG, Spruce Bank Farm, Oak Lake, Man., breeder and importer of Shorthorn Cattle, improved Berkshire Swine, White Wyandottes and White Leghorns. Young stock for sale. 2448

WM. MCBRIDE, importer and breeder of improved Chester White Pigs. Young stock for sale. Pairs and trios furnished not akin. Address—Wm. McBride, Box 258, Portage la Prairie, Man.

W. J. McCOMB, Beresford, Man., breeder of Pure bred Herefords. I have a large herd of young stock, also a few aged breeders for sale. My stock is of the best and prices right. 2453

JAMES GLENNIE, Arden, Man. Importer and breeder of Holstein-Friesian Cattle. Bull Calves of the famous Teake strain for sale. Write for prices. Box 95.

J. J. MOIR, Glendinning, Man. P. China Pigs, B. P. Rocks, L. Brahmas, S. L. Wyandottes, B. Turkeys, P. Ducks. Orders booked for pigs and eggs.

KENNETH MCLEOD, Dugald, Manitoba. Chester White and Suffolk Pigs for sale. My stock are prize winners at the Winnipeg Industrial Exhibition.

JICKLING & SONS, Dew Drop Ranch, Carman, Man. Breeders of Oxford Down Sheep, improved Yorkshire Pigs & B. Leghorn Poultry. Stock for sale.

HENRY LAYCOCK, Rosebank, Man., breeder of Shorthorn Cattle and P. China Swine. Young stock of both classes for sale. Prices satisfactory.

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JOHN TURNER, "Bonny Brae Farm," breeder of Polled Angus Cattle. Young stock of both sexes for sale. Address, John Turner, Carroll, Man.

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J. VAN VEEN, breeder of Galloway and Hereford Cattle and Shropshire Sheep, Lake View Ranch, Fife Hills, Port Qu'Appelle, Assa. 1588

R. M. WILSON, Marringhurst, Man., breeder of Shorthorns. Red Knight 2nd [15563], herd bull, and young bulls for sale.

BRAMPTON JERSEY HERD. Full stock of A. J. C. Cows, Heifers and Bulls. Extra quality. B. H. Bull & Son, Brampton, Ont.

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JAS. ROBERTSON, Beaver Brand Farm, Glendale P. O., Man. Poland China Pigs for sale from imported stock. Prices right.

ROBT. WHITE, Wakopa, Man., breeder of Shorthorns. Herd headed by "Crimson Chief" (24057) Young stock for sale.

A. BRADLEY, Portage la Prairie, Manitoba. L. breeder of Tamworth Pigs. Young Pigs for sale.

W. M. SMITH, Fairfield Plains, Ont. Ayrshires, Southdowns, P. Chinas, Duroc Jerseys, Poultry.

WM. CHALMERS, Hayfield, Man., breeder of Shorthorn Cattle. Correspondence solicited.

GEO. ALLISON, Burnbank, Man., breeder of Shorthorns and Leicesters. Stock for sale. 2481

STEEL BROS., Glenboro, Manitoba. Breeders of Ayrshire Cattle. Young Stock for sale. 1731f

JAMES STANCOMBE, Cartwright, Man., breeder of Shorthorns. Three choice-bred Bulls for sale.

THOS. MCCARTNEY, Longburn, Man. Ayrshire Cattle. 4 yr.-old bull David, & young stock for sale

MENZIES BROS., Shoal Lake, Man., breeders of Shorthorns, Oxford Downs and Berkshires.

JNO. S. GIBSON, Morden, Man. Shorthorns and Poland Chinas. Bull (22801) and Boars for sale.

WELLINGTON HARDY, Pomeroy, Man. Ayrshires and large Yorkshires. Young Stock for sale.

W. E. BALDWIN, Manitou, Man. Tamworth Pigs. Young stock for sale.

THOS. H. WEBB, Clearwater, Man. Breeder of Berkshire Swine. Correspondence solicited.

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GEO. N. HARRIS, Lynden, Ont. Breeder of reg. Berkshire Pigs. Young stock for sale.

JOSEPH TAYLOR, Fairfax, Manitoba, breeder of Shorthorn Cattle. Young stock for sale.

WM. HEDLEY, Oak River, Man., breeder of Leicester Sheep. Rams for sale. 2447

JAS. MURRAY, Breeder of Leicester Sheep. Young Rams for sale. Lyleton, Man. 1627f

GEO. RANKIN, Hamiota, breeder of Shorthorn Cattle. Stock always for sale. 2443

JAMES STRANG, Baldur, Man., has for sale two Pedigreed Shorthorn Bulls.

ALEX. WOOD, Souris, Man., Breeder of Oxford Down Sheep.

R. McLENNAN, Moropano P. O., Man.

Breeder and Importer of

SHORTHORN CATTLE.

I have on hand some fine young stock of both sexes for sale, including **Royal Duke** (24640), a dark red 3-year-old. Write for prices before purchasing elsewhere.

Shorthorns and Polled Angus.

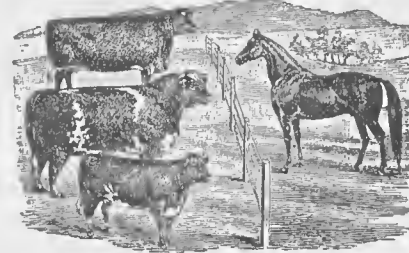
I have a few choice Shorthorn and Polled Angus Bulls and Heifers for sale, 1- and 2-year-olds. All registered. Prices right.

A. CUMMING (ROSEBANK FARM)

Rosburn, Man.

Lone Tree P. O.

W. D. FLATT, Hamilton P. O. & Telegraph Office



OFFERS FOR SALE

22 CHOICE SHORTHORN BULLS

From three to fifteen month old. Persons requiring Show Bulls can be supplied from this bunch.

20 COWS and HEIFERS

served by imported bull, Golden Fame, 28056. Farm six miles from Hamilton. Catalogue sent on application. Visitors met at G.T.R. or C.P.R. if notified. Prices consistent with quality. Inspection invited.

HOPE FARM,

ST. JEAN BAPTISTE, MAN.

Headquarters for GALLOWAY CATTLE.

Apply to **T. M. CAMPBELL**, Mgr.

TREDINNOCK HERD

OF

AYRSHIRES.



Winners at the leading fairs of 1898. Awarded at Toronto, London and Ottawa—16 firsts, two sweepstakes, silver medal and other prizes, in all numbering 34, among which were seven herd prizes, four being firsts, and first for four calves, bred and owned by exhibitor.

ROBERT REFORM, **JAS. BODEN**, Proprietor, Manager.

2458

ST. ANNE DE BELLEVUE, QUE.

When writing mention The Farmer.

of his studies, and was in the act of opening the door, a number of students detected him so engaged.

"Mayhew, Mayhew!" the group shouted as with one voice, "where are you going? Don't open that door! Van Amburg is there—he's a kicker and a biter! You'll be killed! Don't open the door!" Van Amburg was a notorious racehorse which had been sent to college "for operation," because of his supposed ferocity. Yet he a novice, had passed many an hour in his society and could not have desired a more gentle companion. "We have often," says Mr. Mayhew, "laid long together side by side; or, as I reclined upon the straw reading, Van's head would rest upon my shoulder, while a full stream of fragrant warmth would salute my cheek. Still, such a creature, so open to advances, so grateful for little kindness, was a reputed savage."

Sylvester Cook has been fined \$20 at Virden for practicing as a V. S. without a license.

An aged Hackney gelding, Norbury Squire, was sold at the Glasgow show yard for \$4,250. He has never been beaten in any show ring.

J. E. Smith, Brandon, has sold his well-known stallion, Sir Arthur, to Smith &

a pleasant one to him. And the sucking motion takes down the drench while the horse's attention is being distracted from it.

W. C. Edwards, M. P., of Rockland, Ont., is promoting a joint stock scheme to be called the Russell and District Live Stock Improvement Co. It is proposed to begin with horses. A good stable is to be built on a pretty large farm, with reliable practical men as directors and a manager. Good sires of the best breeds will be introduced, and besides service for the mares in the surrounding townships, enough will be kept on the farm to give ocular demonstration of the possibility of profitable horse breeding.

The Canadian correspondent of the English Rural World says: "The Clydesdale seems to be the favorite horse here for draft purposes or for getting the marketable kind of heavy horses. The Shire is used to a more or less extent, but is not so popular as the former. To get the right type, however, good blocky mares must be used. A favorite plan for getting good coach and saddle horses is to lay the foundation by crossing a thoroughbred on a good active type of mares with some speed, and then follow this with the Hackney. The Hackney seems to be growing in favor amongst our breeders, and some very fine specimens of this handsome horse are to be seen at all our leading shows."

Shorthorn heifer to lay on fat, the consequence being that they fail to breed. The Polled Angus hardly attains the size of the two breeds I have mentioned, but as an offset they more than make it up in their greater utility to fatten and their greater uniformity. Take a bunch of each of the three breeds and you will find fewer culls among the Angus; at least that has been my experience. I have no hesitation in saying that on the same feed, such as the majority of farmers have in Manitoba and the west, the Angus will rustle through the winter better than the other breeds I have mentioned. For crossing purposes he is unexcelled. There is a uniformity about his get that makes them very desirable, and this is a strong point at selling time, let the breed be what it may. If your cattle are of the low-down, broad-chested, soggy, easy-fattening sort, uniform in their looks, you will make the buyer's mouth water when he sees them, and it will be your own fault if you don't get a good price. The buyer knows from experience that that class sells the best in the old country markets and stands the journey far better than the leggy, loose built kind.

In wintering the cheapest feed is hay or hay and straw combined. In some parts the hay is not of a good quality; therefore, to produce good results, it ought to be supplemented with some other feed. Oat sheaves, cut when the kernels at the top of



Taking off a Wheat Crop, on the Farm of Brown Bros., Regina, Assa.

Cavanagh, Elkhorn, in which district the horse will travel this season.

It is a good plan to wash a working horse's shoulders and neck at noon and night with cold water. It will go a good way in tending to keep them free of sores.

It is said that a wealthy Prussian land owner has begun to use camels in plowing. One camel can do the work of two or three horses and costs less to keep it. They do not appear to suffer from the change of climate.

A correspondent in an exchange gives the following plan of fitting a collar to a horse's shoulder that will ensure perfect fit and freedom from sores:—Put the collars into a tub of hot water at night and let them stay until morning. Then take them out and put them on the horses, buckle on the harness solid, and work the horses hard all day. At night the collars will be dry and exactly fit the shoulder. Never change a collar once it is fitted.

To make a horse take castor oil or other doses which he refuses to swallow, grasp his tongue lightly in the hand, raise his head high up, and while pouring the liquid into the throat through a long-necked bottle, tickle the roof of his mouth with one finger of the hand which holds the tongue. This will make him work his tongue in the endeavor to get free, as the sensation is not

CATTLE.

Breeding and Feeding Stock in Western Canada.

By D. C. Stewart, Castleberry, Man.

I will first treat of cattle, as being the most important to farmers. Breeding comes first. First choose your breed and then always try and get the best sire your purse can afford. Avoid all weak-headed bulls. By weak-headed I mean any bull whose head is like a heifer's. A good masculine head is almost invariably the sign of a good getter. A bull with such a head will leave good heads on your steers and heifers and help to sell them. As to breeds, I have no oar to row and my remarks are simply the result of observation as a stock breeder from a Manitoba point of view.

The Shorthorns are the leading cattle in the Northwest at present, and when they are of the right sort are pretty hard to beat. The Aberdeen Shorthorn is the most popular, as is the case all over the world. Being evolved in a colder and harsher climate than the Hereford, they can withstand more cold than that breed. In fact, the main difficulty in keeping our stock up to a right standard is the tendency of the

the stalk have commenced to harden, form perhaps the best feed we can raise. Steers, heifers and dry cows can, if well sheltered from wind storms, winter outside and do well on such feed. The proper feed for three and four-year-olds is about four sheaves per day, fed morning and evening, with as much hay as they will eat up clean at noon. The above feed will keep steers and heifers in first-class condition, and by increasing the quantity towards the latter part of winter, they can withstand the short grass feed in April and May. In feeding hay alone, where it is of extra good quality, one ton per day for every 50 head is about the right quantity to keep them in thriving condition. Always give plenty of water and keep a lump of rock salt in a box on the feeding ground.

Manitoba is an ideal country in which to winter cattle outside, owing to its dryness. Cattle do not mind cold much if shelter from winds is provided. In proof of this, steers have been shipped from my district which weighed 1,500 at 2½ years. These never saw the inside of a stable and were fed on hay alone. Of course, like Glenbogie's famous Highland "queys," they were suckled calves, and as Glen pithily puts it, "They were fed every 'drop' of their mother's milk, and they were never hungry afterwards." Where there is no natural shelter a large shed of tongue and grooved lumber, with a big rack down the centre, having doors large enough to admit a sleigh

and load, is the best substitute. By de-horning the cattle when young, one can feed any number without tying up, and they will summer better than cattle wintered in too warm a stable. The reason for this is that cattle in a warm stable cast their hair in March and suffer terribly from the cold winds of April and May when turned out to grass.

Cows, calves and weak yearlings should always be stabled. The stable should not be too warm, and ventilation should be provided so as to regulate the temperature. Windows should be in every stable, and always on the south side. On farms where there is an abundance of straw good results can be got if the cattle are fed turnips. This is the staple food in Scotland, where they raise the "best Scots." The farmers there have a smile on their faces when they have an abundance of straw and "neeps." Boiled potatoes are also good, but eschew raw ones, as cattle don't do well on grass after being fed on raw potatoes. If you have plenty of crushed grain and wish to feed it, continue feeding till grass is well advanced in spring, otherwise you will lose all the benefit.

In herding cattle teach your dog to drive quietly. Most men seem to think that the right way is to hunt cattle as they would hunt deer. This is a great mistake. An animal will lose more beef by one hunt with a vicious dog than it will gain in a month. The fatter the animal the more danger of being hurt.

I have treated so far of store cattle, as usually wintered by the farmer. Stall feeding is not practiced to any great extent in this part of the province. Near towns it may be made to pay, where the animals can be disposed of when fat. But for shipping in spring I would stall the animals early, feeding them all the hay and sheaves they could eat till about the beginning of February. I would then give them an allowance of oats and wheat screenings, chopped, commencing with a small quantity and increasing gradually. Feed turnips or boiled potatoes daily, or, in their absence, a bran mash twice a week. By the first of May they should be fit to ship.

Always water regularly and give a little salt now and then. On warm days let them have a run on a plowed field, where they can lick up some earth, as this helps to keep their stomachs right. Earth taken from a gopher heap will often stop scouring in calves when all other remedies have failed.

In horse breeding, breed for the market should be the motto of every farmer.

For the majority of farmers draught horses are the best to breed. The great fault with Manitoba horses is their lack of size. You cannot breed draught horses too heavy, if you breed them with action and quality. If you have a heavy mare breed her to the best heavy horse you can get. Even with the best of such you will always breed too many light ones. This is true as regards light horses as well as heavy ones. Feed your colts plenty of oats and a little bran mash once a week. Give them plenty of exercise. Well fed, they won't mind the cold, and if they paw among the snow a little every day it will keep their legs right. The first two years determines the size of the horse; starve him then and he will be dwarfed for life. The Clydesdale men feed their colts porridge and milk as well as oats, to make them grow.

Sheep do well in Manitoba, and every farm ought to have a few, as they come in mighty handy in the harvest time when meat is scarce. They must be kept in winter time well sheltered from winds and draughts to get the best out of them. A little oats and bran every day, along with clean weedy hay, will give the best results. A couple of hounds will soon settle the wolves. Sheep sometimes scour with the new grass in the spring. In such cases look out for maggots. Lambs should be taken off the dams in September.

Winnipeg Prize List.

Advance sheets of the Winnipeg prize lists have been issued and sent to all last year's exhibitors. The prize list shows marked improvement in many ways in the amount of prize money offered. Copies of these advance sheets can be secured by any intending exhibitor by dropping a card to F. W. Heubach, Winnipeg. Considerable improvement will be made to the grounds and buildings this year and the exhibition of 1899 is expected to be better than any previous one. The complete prize list will be out in a couple of weeks.

Fraudulent Registry.

A rather interesting case of alleged fraud in cattle dealing has been brought before the Dominion Cattle Breeders' Association by W. D. Shattuck, Davisburg, Alberta. Shattuck had made a joint venture with Herbert Wright in importing pure-bred stock from near Guelph to be sold in Alberta. It was out of one of these importations a heifer, called Irene, that the dispute arose. Shattuck alleges that this heifer, bought from John Kelly, Shakespeare, was only a grade. Subsequently Shattuck brought the case under the notice of the Dominion Shorthorn Breeders' Association, and negotiations took place in the presence of J. I. Hobson, representing the Association. Some kind of compromise seems to have been come to, and on the faith of this Wright tried to get the heifer through the agency of a man named Sutor, who lived near Shattuck. He refused to give her up, and then Sutor managed to get her away and kill her, presumably with a view to conceal her identity. A criminal information was then sworn out against Wright and Sutor, and the preliminary examination is now being held before Inspector Wilson at Calgary. The hide and head of the heifer have been found and identified and some interesting revelations may be expected.

Does a Good Bull Pay?

Most emphatically it does pay to use a pure-bred bull. Tests of this are only too numerous all over the west. The animal sired by a good pure-bred bull always sells more readily at an advanced figure than the one sired by a scrub bull. The only time such animals will sell for less is when they get into a scrub farmer's hands who does not know how to take care of them. The only excuse for using a grade sire is that he is cheaper, but it must not be forgotten that this also cheapens the calf. A saving of fifty cents or a dollar in the service fee made by using a grade sire when a pure-bred one can be obtained means a loss of ten or twenty times that amount when the progeny comes to be marketed. Don't forget this. If you have ten to twenty calves coming the loss in lower market value will go a long way towards paying for a good sire. A good sire—the best pure-bred one can get—is the only kind of a sire to use, whether for beef raising or for dairying.

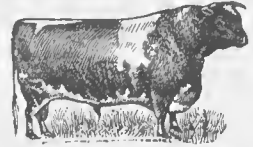
Olds, Alberta, May 2nd, 1899.

J. A. McGill, Esq., Neepawa, Man.

Dear Sir,—Pigs arrived yesterday all right. I am more than satisfied with them. They are better than expected. I think the boar is worth his weight in gold. He is a beauty. If you have not made out the pedigree yet, call the boar "Gold Dust" and the sow "Lady Finger."

Yours truly,
E. BAME.
(Advt.)

Marchmont Stock Farm.



SCOTCH-BRED

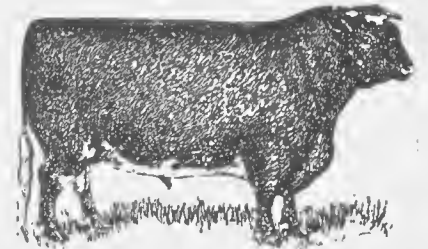
SHORTHORNS

12 Young Bulls for Sale

At moderate prices. Also **BERKSHIRE PIGS.**
TELEPHONE 1004B.

W. S. LISTER, Middlechurch P. O.,
(7 miles North of Winnipeg.)

J. E. SMITH.



J. E. Smith has for sale a number of the very choicest Clydesdale Stallions and Mares, Shorthorn and Hereford Bulls, Shorthorn Cows and Heifers. All animals registered. Stock right. Prices right and no reserve.

J. E. SMITH, Box 274, Brandon, Man.

PIONEER HERD OF SHORTHORNS



I have been breeding Shorthorn Cattle right here for over a quarter of a century. I breed my own Show Cattle, and last year had at the Winnipeg Industrial the Gold Medal Herd. First for Bull and two of his get, and first for Cow and two of her progeny. I usually have stuff for sale, and am always pleased to show it.

WALTER LYNCH, Westbourne, Man.

PLAIN VIEW STOCK FARM

PORTAGE LA PRAIRIE, MAN.



The home of Shorthorns, Cotswolds and Berkshires. Watch this stock for something good.

F. W. BROWN, Prop.

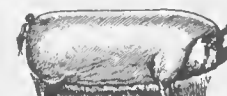
PURE BRED AYRSHIRE CATTLE.

Imported from Scotland, of the very best prize winning milking families, possessing large size, robust constitution, beautiful udders and large teats. Gold Medal herd from 1893 to 1897 at leading Canadian shows. Great prize record. Not been exhibited since. Choice Tamworth Swine—The bacon pig of the day. Stock all from noted prize-winners. Choice Collie Dogs—Imported and home bred. Won all leading prizes in Canada up to 1897, also second at New York Bench Show in 1897.

Stock all ages for sale.

R. G. STEACY, Importer and Breeder,
Box 720, BROCKVILLE, ONT.

OAK GROVE FARM.



SHORTHORN CATTLE
and
LARGE, IMPROVED
YORKSHIRE SWINE

Orders booked now for Young Pigs. Among the Shorthorns recently imported from Ontario, I have for sale the 15 months old bull, Lord Lottie, and a few very fine heifers.
Timothy Seed.—A large quantity of pure, clean, timothy seed for sale.

JAS. BRAY,
Longburn, Man.

Barley as Stock Food.

Owing to the lateness of the season more coarse grains will undoubtedly be sown than usual, and The Farmer would like, therefore, to say a word in favor of barley. Many object to growing barley on account of the awns; they are objectionable, of course, but the good results to be obtained from barley as stock feed, and the yield that can be secured per acre, should easily over-ride any little objection to handling it. In feeding experiments at both Ottawa and Guelph, barley has been found to give most excellent results in fattening pork, either fed alone, in combination with other grains, or with shorts. It produces pork of a high quality for bacon purposes. In England the highest quality of bacon is grown on barley.

An analysis of barley shows that it contains an amount of animal food closely equivalent to that found in either wheat or corn, and more than in either bran or oats. Barley contains about the same elements to produce growth of bone and muscle in young animals as wheat and more than corn. For the production of fat in mature animals it is practically equivalent to either wheat or corn.

Feeding tests at various experiment stations have shown that in actual tests barley has done what it was expected to do from a study of its analysis. At Colorado a feeding test showed that ground barley made the most rapid growth in young pigs of all the feeds tested, and it was also the cheapest. One pound of growth was made with 3.6 pounds of grain and 0.8 quarts of skim-milk, at a cost of 2.2 cents for the food. Ground corn required one-half more food to make a pound of growth. Ground barley and corn fed together gave better results than the same grains fed separately. The experiments also showed that ground barley gave one-twelfth more gain than whole barley. Mixed with other grains, or milk-feeds, barley gave excellent results in feeding steers or sheep, as well as swine. Altogether, it is one of the best stock feeds to grow, and western farmers will be consulting their best interests when they grow a few acres of it.

Keep the Bulls Away.

The losses in the calf crop on the western ranges in the United States is so great this season that many cattlemen are contemplating such change in management as will be likely to prevent it in the future. The change most commonly proposed is to keep the bulls away from the herd until July, so that the calves will not be dropped until considerably later in the season than now, and not until the grass has obtained a good start. Spring seems to be the time when calves will drop if herds are left under natural conditions, but the ranchmen find it necessary to make a change in order that the young calves may escape the inclement weather of a late spring.

The ranchmen of Western Canada have suffered from the same cause and the same remedy has been advocated. The Farmer hopes the ranchmen will act on it this season. Don't think about it, but act. It means money in your pocket.

A grade sire is bound to breed your herd down.

Now is the time to prepare for next winter's feed supply.

When the stock go out to pasture, don't forget to place salt where they can get it.

A man is known by the company he keeps. This applies to the man who keeps scrub sires.

Expansion of flocks and herds means contraction of crops — in bulk — when it comes to shipping them.

The cow that comes through the winter "spring poor" and plastered from hip joints to heels with stable filth has had one-half her usefulness in the dairy destroyed by such treatment.

Calves that are greedy drinkers should have a wooden float put in their pail, so that it will be more difficult to get the milk. Some bore a hole in the centre of the float and put a rubber teat in it. The calf takes the milk through this naturally and mixes it with the saliva, thus insuring proper digestion.

Swift & Co., Chicago, the well-known packing company, are going into the ranching business, having recently purchased 12,000 head of cattle and leased a ranch of 110,000 acres in Indian Territory. Negotiations are proceeding for the lease of 53,000 more acres. The average price paid per head was \$24, and the lease price of the land, 10 cents an acre. The stock will be increased to 24,000 head.

The prize money offered for Shorthorns at Toronto Industrial this year will be the magnificent sum of \$1,750. Of this amount the Shorthorn Breeders' Association will give \$750. Compared with this, Winnipeg does not do so badly this year. The prize money here for Shorthorns is \$1,046, of which the Dominion Shorthorn Breeders' Association puts up \$500. This is indeed a valuable prize list and should bring out the best show of Shorthorns ever seen at Winnipeg.

Many a calf is spoiled by being kept without food until so very hungry that when given food it gulps down the milk so rapidly that it is not mixed with the saliva of the mouth as nature intended it should be. The result is that the delicate stomach is injured and the calf will never make as satisfactory gains as it should. A young calf should not be fed more than two quarts at a feed for at least a week. It should be fed at least three times and better four or five times a day for the first week. The quantity can then be gradually increased and the number of feeds a day reduced to three, then to two. All milk should be fed sweet and warm.

The United States, Canada, and Argentine supply England with fat cattle. The Americans send the best finished cattle, and the cattle from Argentine are improving rapidly. The number of pure-bred bulls sent into that country must make a great improvement in the stock. The range men of the Western States have been careful to get good bulls to improve their herds. We may well ask, What are the farmers of our western plains doing? The range men may carry on the work of improvement by wholesale, as it were, but with the farmer it must be done in a somewhat small way. Each year should see a distinct advance made, otherwise our cattle will tend to go back. What are you doing to improve your herd this year?

Letter of Thanks.

Winnipeg, 19th April, 1899.

G. O. Woodman, Esq., Secretary-Manager
Northwest Fire Insurance Company,
Winnipeg.

Dear Sir,—I am advised by Mr. G. A. Muttelbury, of Winnipeg, that you have given him a cheque on my order in full payment of loss by fire on 6th Feb. last, amounting to \$350.00, and as I have received very generous treatment at the hands of your Company, I wish to take this opportunity of thanking you for the payment of my claim and for the liberal way in which the loss has been settled.

Yours truly,
J. A. McGUFFIN.
Advt.)

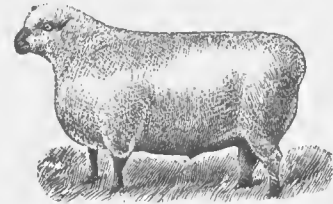
J. A. S. MACMILLAN

IMPORTER OF

Clydesdale, Shire and Hackney
STALLIONS,

Has a few choice ones for sale; also

Pure Bred Shropshire Sheep.



Rams and ewes from the most fashionable imported blood. Inspection invited. For full particulars apply

2236

Box 483, BRANDON, MAN.

Prairie Home Stock Farm,

CRYSTAL CITY, MAN.



Shorthorn and Ayrshire Cattle.

Shropshire Sheep.

Yorkshire and Berkshire Swine.

Address all communications to JAS. YULE, Mgr.

2260

THOS. GREENWAY, PROP.

Choice Young Bulls for Sale.



Sired by TOPSMAN, the champion Shorthorn Bull at Winnipeg in 1897, and STANLEY 6th.

Anyone wishing to obtain a bull possessing individual merit and of high breeding can make no mistake in writing

J. G. BARRON, Carberry, Man.

JERSEY BULLS

FOR SALE.

I am now offering my stock Bull, BELVEDERE STOKES PIGS, for sale, also several young Bulls.

Write for particulars.
WM. MURRAY,
2340 Dugald, Man.



English Berkshires—B.P. Rocks.

FOR SALE.

A litter of 11 farrowed in December, exceptionally well marked and good length. Another litter farrowed end of February, and a litter in March from Melody 19th (imp.). These are grand pigs.

JOHN LAHMER, Carville P.O., Ont.
Station & Telegraph Office—Richmond Hill, G.T.R.

WALNUT GROVE SHORTHORNS.

We are offering five Bulls from 7 mos. to 2 yrs. of age. Stock Bulls (imp.) Warfare (56712) and (imp.) Royal George (17106), and Centennial Isabella, Scotland Yet (23375), also a few Heifers.

A. & D. BROWN, Iona, Ont.

SHEEP.

Feeding Grain to Lambs.

Prof. Craig carried on a very interesting experiment at the Wisconsin experiment station some years ago. It was to test the best way of feeding grain to get the greatest growth in the lambs. Grain was fed to one lot of ewes and not to the lambs, with the idea of increasing the milk flow. In a second lot grain was fed to the lambs only, and to both lambs and ewes in a third lot. The second lot made the most satisfactory gain. The ewes lost a little in flesh, but they pick up readily when the lambs are weaned. No gain was found in feeding the ewes as well as the lambs, and to feed the ewes extra to make them give more milk did not produce the gain expected.

In an experiment in feeding lambs grain before weaning, for ten weeks, it was found that corn meal gave the greatest gain for the least feed, averaging 3.8 lbs. a week per lamb. Whole oats made the same gain, but it required more pounds of grain to do it. Wheat bran and whole oats will make lambs grow quickly. If you have never tried it, do so this spring. Make a "creep" for them and they will soon be at the grain.

Prof. Craig continued the grain ration after the lambs were weaned, and those lambs that were accustomed to grain before weaning stood the weaning the best. Grain was continued then until they were ten months old, and he found that feeding the lambs grain before weaning had a marked influence on their maturity. In three trials of this experiment the lambs fed grain before being weaned were ready for market seven weeks before those not getting grain before being weaned. In two other trials the grain fed lambs were four weeks ahead of the others. He makes the following conclusions:—

"When the lambs are to be sold at weaning time, at the age of three or four months, it is profitable to feed grain before weaning.

"When the lambs are to be sold when about seven months old, it will pay to feed them both before and after weaning.

"When lambs are fed grain continuously from birth, they are fit for the market at any time, so that advantage may be taken of any favorable fluctuation that may occur in market prices."

In our short summers feeding grain to lambs from the time they will eat it until sold will be found profitable, if the grain is to spare, so as to make all the gain possible before the cold weather comes on.

Lambs should be docked when from a week to ten days old.

Young ram lambs that are to be raised for mutton should be castrated at an early age; about three weeks old is a good time. Lambs suffer very little from the effects when the operation is done at this age, and, besides, it is more easily performed.

Lambs will begin to eat grain when a month old. Try them with a little fine ground meal. Any gain they make in the first three months is twice as good as any later gain. For, as compound interest grows, so does the start given to lambs.

It is worth while to be able to kill a wolf in France. The bounty on whelps is \$8, on a she wolf, with young, \$30, and on one that has attacked human being, \$40. Fourteen people have been attacked by wolves within the last fifteen years. They are more ferocious in France than any species known here, but much less numerous. Only 189 were killed in the last year, for which a report is forthcoming.

The Farmer has repeatedly called attention to the value of rape as a supplement-

ary feed, especially for sheep and pigs. Our excuse for calling attention to it again is that it will make more cheap pork and more cheap mutton than any other stuff that can be grown upon the same acreage. Besides, the pigs or sheep will do their own harvesting. The cost for seed is small and the returns quick, hence it is one of the most profitable crops a farmer can grow. You cannot afford to be without a patch of it.

SWINE.

Hog Raising.

A Paper read by J. W. Chrysler, at the Yorkton Farmers' Institute.

Hog-raising is one of the most profitable branches of farming in which farmers can engage. Hog-raising should go hand in hand with dairying and grain-growing, as the by-products of the dairy and unsaleable grain, or that which would have to be sold under value, if fed to hogs would produce large profits.

The hog is the most profitable because it brings the farmer quick returns by maturing quickly and possesses the faculty of taking that part of the produce of the farm and dairy which is not in demand and converting it into produce which is high priced, always in demand, and at a profit which will bring the value of the produce fed to equal the value of the first quality produce. But this profit can only be obtained by proper care and handling.

The first essential for keeping hogs profitably is a suitable shelter; they require a warm dry place to sleep in, and must be protected from cold winds while feeding. The notion that any kind of a place is good enough for a hog is one of the greatest hindrances to the progress of the pork industry, and is the leak hole that very often lets out a good share of the profits. To those who are about going into the pork-growing industry, and perhaps some who are in it now and would like to increase their profits, there are a few things which would be worth while to consider.

The first would be the selection of a breed of hogs which will produce pork that will command the highest price in the market. Experiments have proved that no one breed contains all the good points, and also that there is no constant superiority in breeds in respect to the quantity of feed consumed per pound of increase in live weight, and also, that, on the whole, for fattening purposes, cross-bred swine and grades gave better results than pure-breds.

My experience has been that in order to get the best results we must use pure-breds on both sides always. In this fast age of ours we have not time to commence with grades, when with proper care and judgment we can select two breeds that will give us the ideal pig at once, and a hog that will suit the demands of the market—a proper ham and bacon hog—that has not too much lard and has the lean and fat evenly distributed through it, for, no matter how careful we may have been in selecting our breeds, if we do not feed properly we will not produce the quality of pork nor the profit that our expectations might warrant. Feeding to-day and starving to-morrow has not proven a success, because it does not produce the streak of fat and streak of lean to the best advantage as some people might think.

Having selected our breeds, the next thing is what to feed and how to feed it. The notion, held by many, that a breeding sow should be kept thin and practically half-starved is a very great mistake; there is no time in the life of a sow when she requires suitable food and good quarters more than when she is carrying and nursing her young. She should be kept in fair

EVERY STABLE REQUISITE

Correspond with us if you require new or second-hand Carriages or Buggies of any description. New or second-hand single or double Driving or Work HARNESS, SADDLES, BRIDLES, RUGS, ROBES, BLANKETS, etc.

We have the largest and oldest-established Horse Market in Canada. Auction sales every Tuesday and Friday throughout the year. Private sales every day. Consignments solicited. Special terms made for car-loads.

WALTER HARLAND SMITH,

Auctioneer and Proprietor,

"Grand's Repository," Toronto, Canada.

Established 1856.

D. McBETH, OAK LAKE, MAN.

BREEDER OF

CLYDESDALE HORSES



AND
SHORTHORN CATTLE.



I have a number of promising young Stallions for sale.

My Shorthorn herd is headed by "Best Yet," bred by Hon John Dryden, of Brooklin, Ontario. A number of young stock of both sexes, all registered, are for sale, and can be recommended as first-class animals.

Correspondence solicited. Prices right.

R. REED-BYERLEY, Cook's Creek, Man., breeder and importer of Clydesdales. Headed by Gem Prince, sired by Cedric. Correspondence solicited.

FOR

HEREFORDS

CALL ON OR WRITE TO

J. E. MARPLES,

Poplar Grove Farm, Deleau, Man.

(Pipestone Branch C.P.R.)

J. C. & A. W. FLEMING, PILOT MOUND, MAN.

Breeders of Cotswold Sheep, Poland China Pigs, Barred Rocks, and other breeds of poultry.

Growers of all the best varieties of POTATOES. Seed for sale.

Send for Catalogue, and mention this paper.

50 REGISTERED BROOD SOWS

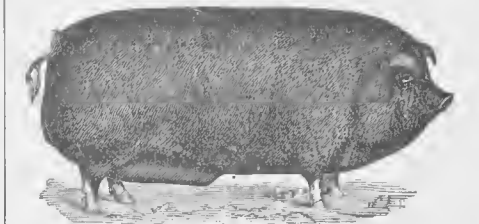
For sale in Berkshires, Yorkshires and Tamworths. A fine lot. Many to farrow in May and June. Also some nice Boars. Close prices.

Caldwell Bros, Grand View Hotel, Dauphin, Man.

W. L. TRANN, CRYSTAL CITY, MAN.

Proprietor of Boundary Herd of

POLAND CHINA SWINE



Our herd are direct descendants of such noted hogs as Canada Wilkes, Guy Wilkes 2nd, M. P. Sanders, and the Tecumsehs. Nothing but first-class stock shipped. Write for what you want; satisfaction guaranteed. Prices always reasonable. Nothing but choice sows kept for breeders. We are now booking orders for spring pigs of 1899. We have a few good winter pigs for sale. Write and describe what you want, and we will endeavor to treat you as we would wish to be treated.

flesh and have liberty to take plenty of exercise up to within a few days of farrowing, when she should be enclosed in order that she should become contented and used to her quarters. Breeding sows should not be given feed that has a tendency to produce too much fat, such as corn and peas. These feeds are too concentrated. She needs food that is bulky as well as nourishing. My experience is that mixed feeds are the best. Such as bran and shorts, ground oats and barley and wheat, equal quantities in bulk, and skim-milk and butter-milk, and ordinary slops from the kitchen. It is better to let the feed soak a while before feeding.

Next is the care of the young pigs after they are weaned. We want to get the largest profit possible out of them, which is done only by getting them on the market in the shortest possible time, which should not be longer than six or eight months. This requires constant care and judgment in feeding. In my experience I find it best to mix feed so that I can give them all they can eat and not put them off their feet. Pigs are put off their feet by having their feed too strong; still I want it strong enough to properly develop them so as to produce flesh, bone and muscle, but not fat until a short time before placing them on the market. Give them all the skim-milk, butter-milk or whey that you can get, with plenty of bran, shorts, ground oats, frozen wheat, if you can get it; in fact, all the refuse grain that accumulates on a farm can be fed with profit.

Frozen wheat is one of the best quality producers we have. In 1892 at the experimental farms there was a pen of pigs fattened from frozen wheat, ground and soaked for twelve hours. They were fed from the 1st of February to the 30th of May. Hams, sides and shoulders were cured and pickled and pronounced excellent in quality. The parts from a pig of the lot which was fed exclusively on frozen wheat were sent to the Wm. Davis Co. Toronto, for examination. The following is Mr. Davis' verdict:—"It is excellent, rather too soft, but rich and luscious. I consider it superior to hogs fed on peas alone."

So we see that frozen wheat is a safe diet to produce high class pork.

But we want to know what it is going to cost us per pound to produce our pork. I will simply quote some extracts from experiments carried on at the experimental stations in order to back up my experience, and also some of my statements made in the beginning of the essay to show that the hog is the means of obtaining a high price for all our grain and the by-products of the dairy and making a home market for our produce.

In 1894 experiments were conducted to test the effect on the quality of the flesh of swine fed on wheat and buckwheat. Complaints had been made by buyers that the quality of the meat was soft in a larger percentage of the animals killed than formerly. It was thought that wheat was the cause. Fourteen hogs of three different litters were sorted into three lots as nearly even as possible. The result was much the same as in 1892, wheat producing first-class pork and softness being principally due to other causes, such as lack of exercise and the use of feeds which furnish insufficient nourishment to the pigs.

One lot of these pigs was fed a mixture of equal parts by measure of barley, rye, wheat (all ground), and wheat bran all soaked in cold water for a period of thirty hours. Lot 2 was fed on ground wheat, soaked same time. Lot 3 was fed on ground buckwheat, soaked same as above. The feed consumed per pound of increase, live weight, was 4.28 lbs., or about 4½ lbs. for lot 1; 4.10 lbs., or about 4 lbs. 1½ oz. for lot 2, and 4.45 lbs., or about 4½ lbs. for lot 3.

The meat from lot 1 fed on mixed grain

was considered a little better in quality than those fed on a simple diet alone, although the gain was a fraction less than in that fed from clear wheat, and from feeding experiments extending over three years in the fattening of 112 swine upon mixed grain, the average gain was 1 lb. of flesh for 3.38 lbs. of feed, which I considered a pretty safe test.

Another test shows that it is very profitable to feed the products of the dairy in connection with grain. In conclusion, when we take into consideration the fact that the demand for first-class pork is practically unlimited and at a fair price, we can safely count on 1 cent per lb. for our grain, which shows that it is not only profitable to raise swine, but that it is also profitable to grow wheat, barley and oats here in the Northwest.

In the discussion which followed this paper, Mr. Chrysler said that he thought that a cross between the Tamworth male and the Berkshire female would produce the most satisfactory bacon hog. As he has been very successful in this line his opinion should be worth something.

Cheap Pork.

The keynote to the successful and economical production of pork is to provide green food in the shape of grazing and forage crops, and just in proportion as the amount of green food is increased will the cost of a pound of pork be lessened. Pork grown on all wheat won't pay a dividend. But pork grown on pasture as wheat, oats, rape, Bromegrass, etc., can be made to pay handsomely. An acre devoted to pasture for hogs will turn a bigger profit than any acre of wheat. No money can be made on hogs if they are kept in small pens and yards, and the food they eat bought at the mill at long prices. Get the pigs out on to pasture. What we are after is growth; let them exercise and grow. Some grain must be fed, and the object should be to keep the young pigs growing as rapidly as possible, but the amount required on pasture will be far less than if grown on grain altogether.

A sour swill barrel is often the cause of scours in pigs.

W. J. Porter, Baldur, has a sow that lately dropped 18 pigs at a litter.

Three hundred dollars have been added to the Toronto Industrial prize list for bacon hogs suitable for export purposes.

United States Consul Lathrop, at Bristol, England, has been pointing out to American hog-raisers that they are losing considerable money by growing the lard hog, and that they want a change to some of the bacon breeds.

The hog is the most economical vehicle yet produced in which to carry the products of the farm to market in a condensed form and at the same time yield the producer a profit above the price such grain thus fed would sell for in the open market.

Keep a record book of the time your sows come in heat. As they come in heat every three weeks, or twenty-one days, you will know then when to expect them a second time, if you do not wish to breed them when in heat the first time. It pays to keep a memorandum book and enter in it. Don't trust your memory. Be positive.

An experienced swine buyer tells us that a good many pigs and brood sows have died this spring. He blames eating too much wheat and getting too little exercise. A healthy sow that winters in a straw pile or dung heap and gets a quart or two of wheat daily scattered on the snow will show better results than if fed all she will eat in a close pen.

WOODBINE FARM, CARBERRY, MAN.



AYRSHIRE CATTLE.

YORKSHIRE SWINE.

S. L. WYANDOTTES

Am booking early orders for spring pigs, and can spare a few choice brood sows. The foundation stock of both swine and poultry is from imported stock. Birds properly mated at reasonable prices. Eggs \$2 per 13.—S. J. THOMPSON & SON, Box 28.

GOLD STANDARD HERD OF REGISTERED BERKSHIRES.



Are still to the front. I am now booking orders for spring pigs sired by my two noted boars "Fitz Lee" (an 800 lb. hog) and "General Booth," and from a grand lot of sows of the choicest breeding. Two litters farrowed in January, and sows due to farrow every month. Unrelated pairs supplied. Correspondence solicited. Address—

J. A. MCGILL, Neepawa, Man.

Thorndale Stock Farm

JOHN S. ROBSON,
MANITOU, MAN.

Breeder of SHORTHORNS. Long established, reliable pedigrees; straight dealing always. Young stock of both sexes always on hand. Write early if you want them. 2185



ALEX. D. GAMLEY

Breeder and Importer of high-class

LEICESTERS.

Some fine young stock from prize winners for sale. Order early.



Box 193, BRANDON.

T. GOSNEY, Miami, Man.

Breeder and importer of Registered

BERKSHIRES.



25 spring pigs, both sexes, and 6 young sows, fit to breed. My stock are from the best known herds and strains to-day in the Dominion or U.S. Call or write.

Ridgewood Stock Farm, Souris, Man.

WM. SHARMAN,

BREEDER OF

High Class Herefords

A few early Bull Calves for sale.

Well Graded

SHIRE HORSES

For sale. Also light blooded stock. Cross S brand, graded with imported stud since 1884. Apply to—

P. S. DOWSON, Miles City, Montana, U.S.

JERSEY BULL FOR SALE.

No. 50202. 2 years old in February. Solid color, black tongue and switch. Took 1st prize in Winnipeg as calf.

H. R. KEYES, Midway, Man.

HOLSTEINS and YORKSHIRES.

Gretqui Montgomery Prince, 3 years, dam Gretqui, (2nd at Toronto Dairy Test, 1895); diploma Bull at Brandon, 1898; one 5 months Bull Calf, Yorkshires for spring delivery. Prices reasonable.

A. B. POTTER, Montgomery, Aaaa.

A Dear Hog.

Last year the American papers were excited over the sale of a famous Poland China hog, Klever's Model, for \$5,100. It was bought by a syndicate of fancy swine breeders, and it was shortly afterwards alleged that the hog sold was not Klever's Model, which had died, but another well-bred sire put in to fill the bill. The seller was indicted for fraud and acquitted. He then brought suit against the buyers for the amount of their notes. Hundreds of witnesses were examined, but so conflicting was the evidence the jury could not agree. Another jury has since tried the case and decided that the attempt to prove the sale fraudulent has failed. The law costs are now about \$8,000, and the case is still unsettled.

At the Nappan experiment station, N.S., Superintendent Robertson found that their pigs last season made a return of 15c. to 18c. per 100 lbs. off skim-milk feed. He doubts very much if pork-raising can be made pay in winter without the dairy cow.

If you are afraid your little pigs are going to have "thumps," get over into their pen and hustle them around a little. Thin pigs seldom take it, while fat ones do. It is also a good plan to stint the sow in her feed and also the little pigs. If the young pigs have plenty of outdoor run there will be no trouble with "thumps."

Some people think that several services of the sow are necessary to produce a lot of pigs. It is not so, but, on the other hand, deformed and dead pigs and difficult birth are more frequently caused by excessive service than anything else. One good service of the boar is quite sufficient, and far better than more services at the same time.

Among the Breeders.

W. Baldwin, Sr., has imported direct from England a pair of Tamworth pigs.

J. E. Marples, Deleau, has sold a nine-months-old Hereford bull to Jones Bros., Lyonshall, Man.

J. G. Brown, Carberry, has sold a yearling bull by Stanley to David Gerrard, Parkissimo.

Two Montana ranchers, J. & S. Spencer, have taken a heavy consignment of stockers out of the Neepawa district.

D. Hysop & Son, of Killarney, took out west a car of pure-bred Shorthorns. All were quickly sold, and more wanted.

A Morden farmer owns a most prolific cow. Within 24 months she has given birth to two pair of twins and a single calf.

W. A. McLeod, Westbourne, Man., has sold his yearling roan Shorthorn bull, Prince Charlie, to Mr. Glennie, St. Mark's, Man.

J. Van Veen, File Hills, has added 12 yearling Hereford heifers to his herd of pure-bred stock. They were supplied by J. E. Smith, Brandon. We learn that he also proposes to handle Polled Angus.

One of The Farmer's advertisers, who has Berkshires for sale, writes: "I find the Berkshires are in favor for the ladies. One lady came to-day to see my pigs and bought one sow, paying cash in advance to secure the same."

The Hon. Sydney Fisher, the Dominion Minister of Agriculture, has recently purchased 30 Shropshire ewes from D. G. Hanmer & Sons, Burford, Ont. Within the last six months Messrs. Hanmer have sent 10 Shropshire ewes and a Hackney stallion to the Newfoundland government.

W. S. Lister, Middlechurch, Man., reports: "James Jones, of Elkhorn, recently purchased from the Marchmont herd the yearling, Lineman. He is a thick, good red roan, well bred and from the cow, Jeiny Lind 5th, 2nd prize winner at the Provincial when nursing him. Without doubt, he will be heard from locally, and may cause trouble."

J. H. Kinnear, Souris, Man., who advertised two Shorthorn bulls for sale in the May 5th issue of The Farmer, writes that he has sold both of them, Golden Royal, 24402, and his son, Quaker Prince, to J. R. North, Fort Qu'Appelle, Assa. These are both grand bulls and are a credit to Mr. Kinnear, and will no doubt be heard from again, as they are in good hands.

Adam Brown, Portage la Prairie, has sold a car of Eastern Shorthorns round that district lately. John Bannerman, Poplar Point; Alex. Moffat, Elm River; J. J. Setter, Poplar Point; John McLean, Prospect, and H. Paterson, Bagot, have taken yearling bulls. Thos. Bell, Portage, a 2-year-old heifer, and J. & H. Little, Oakville, two females and a 2-year-old.

J. A. McGill, Neepawa, Man., has issued a nice descriptive catalogue of his Gold Standard herd of large English Berkshires. Mr. McGill has spared no pains or expense in building up a good herd, having imported again and again the very best stock procurable in Ontario and the United States. He aims to improve it every year, and says he is in a better position now to supply customers with pigs of superior merit and breeding than ever before. Write him for his catalogue.

The live stock associations of Ontario have forwarded another car of stock for breeders in the west. The following is the list of consignments: Shorthorn bull for J. H. Kinnear, Souris, from Pearson & Son, Meadowvale; Shorthorn bull for W. G. Leask, Virden, from Jas. Leask, Wick; two Ayrshire cows for C. W. Peterson, Regina, and two more for Calgary. An Ayrshire bull calf for J. C. Pope, Regina, all from W. M. Smith, Fairfield Plains. Shorthorn bull for Robert Turner, Millarville, from Hon. John Dryden, Brooklin; Shorthorn bull and five heifers for A. L. S. d'Eyncourt, Calgary, from W. C. Edwards, Rockland; Shorthorn bull for C. W. Fisher, Cochrane, from J. P. Fisher, Hyde Park; Shorthorn bull for John McDougal, and one for Geo. McDougal, Morley, both from John Bright, Myrtle; Shorthorn bull for W. H. Ladner, Ladner, B. C., and one for Jas. McCallum, Ladner, both from John Wylie, Streetville.

The Yorkshire herd of D. C. Flatt, Millgrove, Ont., consists at present of 250 head, of which about 40 are recent importations that have just arrived from quarantine. Even with this very large herd he is unable to meet the orders that are coming in daily and is importing another lot of 25 head. The herd taken together is one that will bear critical inspection and contains many excellent individuals. One of the recently imported young sows farrowed 18 living pigs, all of which are doing well. This litter is a very even and good looking lot and speaks volumes for the prolificacy of this famous bacon breed and of the special breeding qualities of the pigs kept by Mr. Flatt. This is not the only demonstration of the fecundity of his pigs, there being several other litters of large numbers, all of which were doing well. Two of the recently imported males are very valuable specimens of the Yorkshire breed, and although differing somewhat in some minor points, will, no doubt, make a grand addition to the effectiveness and advancement of Mr. Flatt's breeding operations and will doubtless enable him to improve his past successful record as a Yorkshire breeder and importer.

Persiatric Plant Spray

The most effective and highly concentrated Spray in the market. Has successfully coped with the dreaded San Jose 'Scale,' and quickly destroys all orchard and garden pests, such as grubs, worms, brown rot, fungi, etc. Contains no mineral poisons such as arsenic or Paris green. Thoroughly reliable.

Persiatric Sheep Dip

The only remedy that will positively cure Scab in sheep. It is also invaluable for the cure of Skin Diseases in cattle, such as bruises, sores, ringworm, gangrene, shear cuts, and for ridding them of vermin. Widely endorsed by the leading stock-raisers of Canada as the best preparation of its kind in the market. Try it.

Persiatric Pig Wash

This preparation acts most satisfactorily on the stubborn Skin Diseases in swine. Has a soothing, healing influence, healing sores and eczematous diseases, and rids the animal of vermin. It acts as a tonic on sickly, depressed animals. Used a week or so before slaughtering, it makes a handsomely dressed animal for market.

Persiatric Horse Wash

This is a preparation of highly-concentrated curative qualities for the curing of Skin Diseases, and for killing all vermin in horses and cattle. Cures Scratches, Mange, Ringworm, Grease, Fozema, Urticaria, etc. Heartily recommended by horse breeders and leading veterinary surgeons.

You cannot afford to experiment where the health of your live stock is concerned—get the best. The Persiatric goods are the standard for PURITY and STRENGTH. At your dealers, or direct from the manufacturers—

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FREE
This hand-some boy's watch with a chain and charm for selling two doz dainty packets of Heliotrope, Rose and Violet Perfume at 10cts. each, or this pretty lady's watch with a chain or guard for selling three dozen. Write and we send the perfume. Sell it, return the money, and we forward your watch all charges paid.

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When writing mention The Farmer.

New Branding System.

An extract from the "Australasian," Jan. 28, 1899.

A short time back an exhibition of the new process of branding cattle by means of a fluid was held at the residence of Mr. J. C. Campbell, Elsternwick, which very favorably impressed all those who witnessed its operation. It is claimed for the process that the hide is not damaged in any way as to render it unserviceable for any application in the arts. A permanent brand, devoid of hair, is however, left, and if all that is represented for it is absolutely true, a new era is about to arise in branding processes. The process consists in the application of a chemical mixture on a branding iron to the hide of the beast. The mixture in time burns its way down through the skin, and produces a definite result. Dr. A. A. Brown, of the Live Stock department, when interviewed on the subject, says that the examination of the skins and tanned hides that have been so branded disclosed that the injury occasioned to the structures of the skin terminated just about or just in the dermis of the true skin. The application of the brand mixture to any particular region of the body induces a caustic action, and produces an effect analogous to a burn. The epidermis, or cuticle, and parts of the dermis or true skin, are destroyed by the process. The effect is likened to that produced by a burn, the intensity of which is somewhere between that of burns of the third and fourth degrees. In nature's reparative process, new epithelium spreads over the granulating surfaces from the edges of the wound occasioned by the caustic. A scar results, which is devoid of hair and glands. The channels of the sweat glands as well as the hair follicles are occluded, if the gland structures themselves are not destroyed. This skin is composed of two parts—epidermis and cutis vera. The epidermis is composed of a number of layers of cells; the deeper layers are soft and protoplasmic, whilst the superficial layers are hard and horny. All the growth takes place by multiplication of the cells of the deeper layers—the rete malpighii. If the whole cellular structure be destroyed, a scar remains.

No blood vessels exist in the epidermis. The cutis vera, or true skin, is formed of dense consecutive tissue, and in cattle it is very thick, and its thickness varies according to situation. The vascular layer bears minute papillae, which project upwards in to the epidermis. The epidermis is moulded over the papillae. In the true skin are situated the hair follicles, from which the hairs arise, the sebaceous glands, and the sweat glands. It would seem that at last a means has been devised for branding cattle that will supersede the hot-iron method, inasmuch as the process in no way impairs the skin for any one of its applicants in arts. In the branding of horses the intensity of the burn is that of one of the third degree. The whole epithelium is not destroyed. The cells in the deeper portions between the papillae, which themselves suffer damage, escape, as also do the epithelial cells around the hair follicles and in the sweat glands, and from them the injury is repaired, leaving, however, a scar, which contains all the elements of the true skin. The hair is not destroyed, though it may alter somewhat in color.

Balcarres, Assa., May 1st, 1899.

J. A. McGill, Neepawa.

Dear Sir,—I will write you a few lines to let you know that *I am well pleased* with the boar. He is doing well. I got the pedigree all right. Yours truly,
Advt.) HUGH NEWSTEAD.

SHORTHORN COWS and HEIFERS.

The undersigned is selling out his herd of Short-horns, and has still on hand

**3 COWS, 2 with Calf at foot, and
3 YEARLING HEIFERS.**

These animals have mostly been prize-winners at the local Fair and are all good specimens of the breed. Cause of selling—no pasturage.

ROBERT SCOTT, Neepawa, Man.

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To be grown successfully need land well prepared—get ready now for next season.

Before you order your . . .

**TREES or SEEDLINGS,
SHRUBS or FRUITS,**

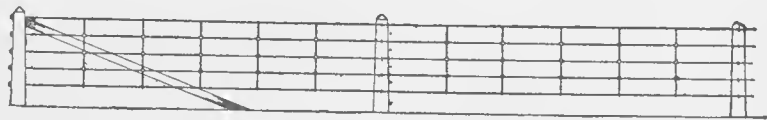
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Correspondence Solicited.

Address The Company, - - - Box 848, Winnipeg.

PLANS FOR FARMERS' ELEVATORS.

The undersigned (designer and builder of Roland Farmers' Elevator) will be pleased to furnish figures for plans and building of farmers' elevators. Correspondence solicited.

ROBERT E. ROBERTS, Roland, Man.

BLACK LEG. VACCINE.

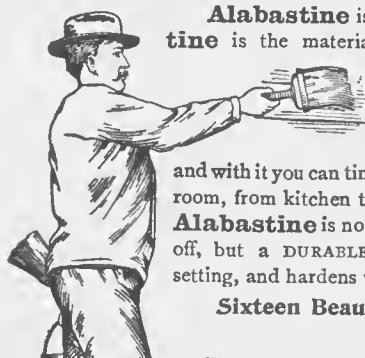
Write for particulars, official endorsements and testimonials of thousands of American stockmen who have during the last 3½ years "vaccinated" their cattle with **PASTEUR VACCINE** and prevented losses from Black Leg.

PASTEUR VACCINE CO. - - 59 FIFTH AVENUE, CHICAGO.

N.B.—Each packet of our original and genuine Vaccine bears our trade mark. Beware of imitations.

Church's Alabastine

For Mixing in Cold Water



Alabastine is for whitening and tinting your walls. **Alabastine** is the material that has nearly driven all prepared kalsomines out of the market. **Alabastine** comes in dry, powdered form, ready for use by following directions and mixing with COLD WATER. **Alabastine** is put on with an ordinary wall brush, and with it you can tint your walls any color. Try **Alabastine** on any room, from kitchen to parlor, and you will be surprised at the results. **Alabastine** is not perishable like all kalsomines, rubbing and scaling off, but a DURABLE coating that goes through a regular process of setting, and hardens with age.

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The "Alabastine Decorator's Aid" sent free on application. This is a valuable help to anyone wishing to decorate a room. We also supply catalogues of beautiful Stencils which we sell at small cost. Artistic work can be done with them with a little practice.

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Answers to Questions.

By an Experienced Veterinarian.

As it is desired to make this column as interesting and valuable as possible to subscribers, advice is given in it free in answer to questions on veterinary matters. Enquiries must in all cases be accompanied by the name and address of the subscriber, but the name will not be published if so desired. Free answers are only given in our columns. Persons requiring answers sent them privately by mail must enclose a fee of \$1.50. All enquiries must be plainly written, and symptoms clearly but briefly set forth.

Epilepsy.

A. D. M., Virden, Man.: Please tell me through the columns of your valuable paper what is the matter with my mare. She is seven years old, and a few days ago I noticed her for the first time suddenly jerking her head as though afraid of getting a blow on the nose. The day before yesterday she took a similar fit, and yesterday she took a similar fit, but it was much worse. She had a quick jerking all over her body and head, and was staggering. I unhitched her from the plow, when she staggered around until she fell. She seemed to sleep for about five minutes, then got up apparently somewhat frightened. She seems to be hearty, eating well."

Answer.—Your mare has had an epileptic attack, which may be the forerunner of other attacks of the same kind at intervals more or less frequent. If premonitory symptoms of an attack are noticed, the mare should be bled, and bromide of potassium given in two to four drachm doses, according to her weight. If this has time to act it may prevent the attack from producing unconsciousness, and this is important, as she is liable to receive injuries in falling down. If the mare is a greedy feeder, be careful not to feed too much grain, and don't work her immediately after feeding.

Hernia in Pigs.

Korn Kobb, Totonka, Man.: "Went to castrate a litter of pigs three weeks old and found four of them ruptured. I operated on three of them and sewed up the opening and the other I let go. Did I do right or what should I have done? How will I operate on the other one?"

Answer.—Your operation was all right and should have been successful if properly performed. The proper points are to make the incision as small as possible and at the upper part of the sac. Avoid dragging on the cord when removing the testicle. Cleanse the skin with carbolic solution before using the knife, and afterwards be careful to get the edges of the cut into close contact everywhere. Horse hair makes a good material to sew with, but should be carefully washed first, or what is better, boiled for a few minutes.

Leg Mange.

W. M., Miami, Man.: "My horses are all troubled with itch on the legs, but not on any other part. They are always biting at their legs and rubbing one hind leg against the other. Horses are in fairly good condition. Fed on hay and oats. Been troubled all winter and it is getting worse."

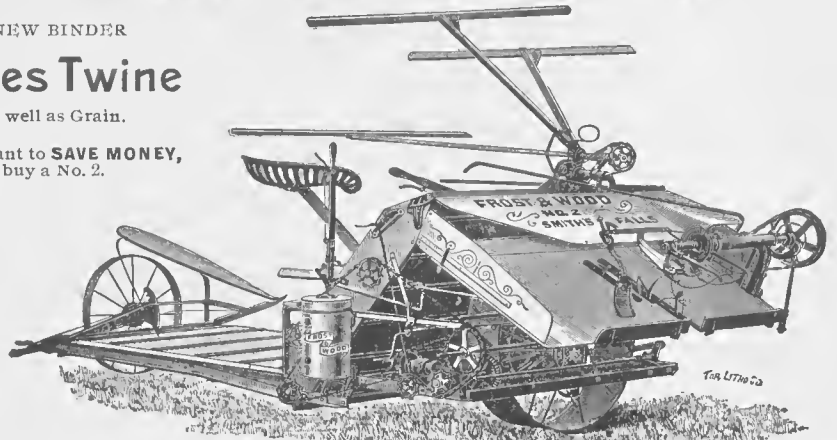
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OUR NEW BINDER

Saves Twine

as well as Grain.

If you want to **SAVE MONEY**, buy a No. 2.



The Frost & Wood No. 2 Force Feed Binder will **WASTE LESS GRAIN** at the top of the elevator while cutting an entire harvest than any other Binder will waste in cutting one acre. The Eccentric Wheel on the Frost & Wood Binder gives a **gain of 16-23 per cent.** in power when the hardest work is being done.

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Answer.—Your horses have leg mange, caused by the presence of minute parasites, which bite and irritate the skin. To cure them the long hair should be clipped off, and some liniment applied which will kill the parasite. Creosote 2 oz., sulphur 4 oz., linseed oil, one pint. Rub in well. After two days wash with soft soap and re-apply. Two or three applications should cure.

BARB-WIRE CUTS

Owing to the ragged nature of the wounds and the poison of the wire, are the most difficult of all flesh wounds to heal, and the only successful remedy is

DR. WARNOCK'S ULCERKURE

It is the greatest healing medicine ever discovered. A positive guarantee is given that if Ulcerkure will not heal any and every kind of a wound, your money will be refunded. Send a 3c. stamp for sample bottle, and prove to yourself its wonderful healing properties, especially for Barb-wire Cut.

\$1 Bottle.

Sold by dealers, or sent on receipt of price by
WESTERN VETERINARY COMPANY, Box 478, WINNIPEG.

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F. TORRANCE, VETERINARY SURGEON

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Telephone 295.

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**Better than Klondyke Gold:
A GOOD PUMP**

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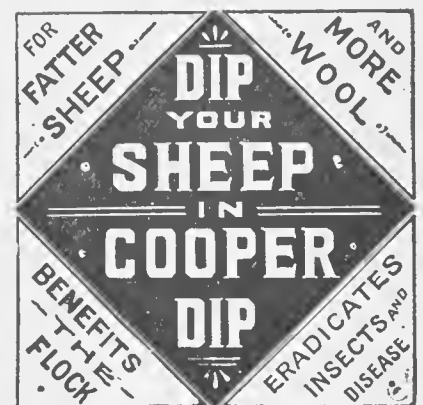
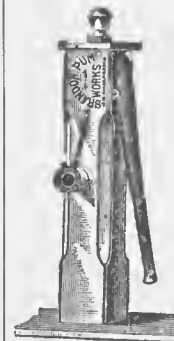
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All kinds of Pumps repaired. Office and Factory, Ninth St., opposite Northern Pacific Station.

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Write for Prices.

Agent for Myer's Pumps with brass lined cylinders and glass valve seats.

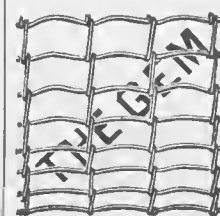


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Case for 1,000 gall., \$16.00.

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FENCE MACHINE

is especially adapted for fencing in the Northwest. It will weave on any kind of wire, including barb, will weave heavier wire and more in a day than any other machine made. **PRICE \$5.**

Call on
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Or write MCGREGOR, BANWELL & CO.
WINDSOR, ONT.



Anconas.

E. R. Collier, Ancona Poultry Yards, Winnipeg, writes: "For the benefit of W. F. C., Manitou; N. B., Belmont, and other readers of your valuable paper, I gladly give you the following information concerning the new breed of fowls, the Ancona, which was obtained from that well-known poultry paper, 'The Feathered World.'"

The birds, though rapidly gaining favor with the public, are still unknown to many who are interested in the different breeds that stock our poultry yards. To begin with, they really are 'Anconas,' having been imported into England from the town of Ancona in Northern Italy by Captain Rowle, of the ship 'Bugle,' about fourteen years ago. Their merits at that time were not recognized, but in 1877 they were again imported and gained a certain amount of favor and were often seen at shows. They

well-known breeder, replies: 'I would strongly recommend Anconas.'

Type.—In general appearance they resemble the Leghorn; color, mottled black and white, black feathers with white tips, wing flights white; other points same as Leghorns.

They have been admitted to the American Standard.

"At present there is such a demand for them in America that orders cannot be filled. I wrote Branthover Bros., of Pittsburgh, and J. L. Bump, of New York, last spring ('98), and again this, for a few birds to increase my pen, and in both cases they replied, 'Very sorry, cannot fill your order.'"

Feeding Young Ducks.

James Rankin, Boston, Mass., has been raising ducks for over forty years, and now raises them for the Boston market by the thousand. The following is his plan of handing young ducks, which, of course, are all in brooders:—

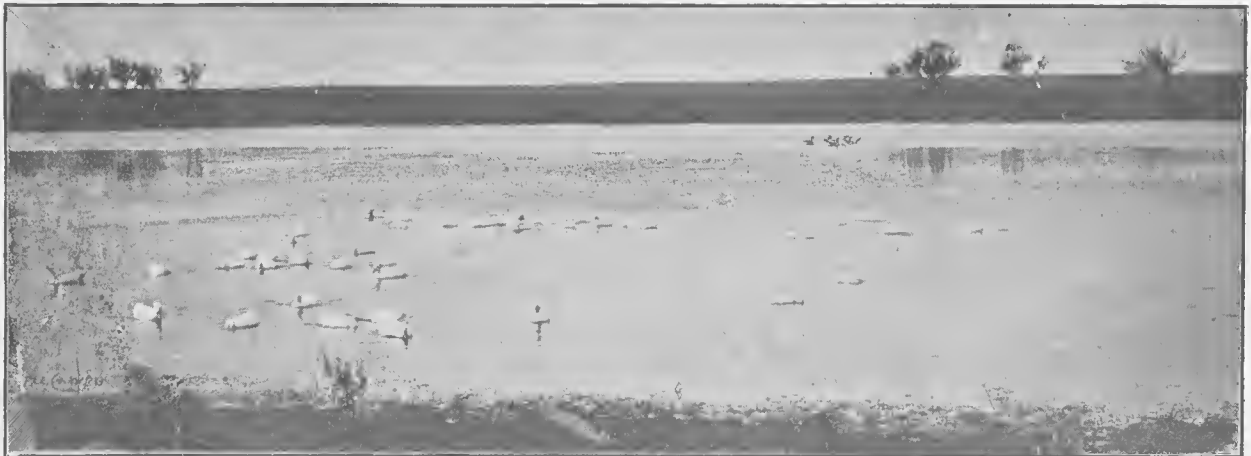
The first food should consist of bread or cracker crumbs slightly moistened, and about ten per cent. of hard boiled eggs, chopped fine, shell and all. We use infertile eggs for this purpose, and those slightly started. Mix in this food about five per

only when fed until six weeks old, then they should be watered between meals also. Feed no more than they will eat up clean, and keep them a little hungry. They will thrive better so. Keep the pens dry and clean, allowing no fifth about.

Artificial Incubation.

The enormous demand for early poultry in the large cities of the Eastern States has gradually developed a most extensive trade in young chickens. To get these chickens hatched early enough it was found necessary to have some more reliable means than the old mother hen, because she could not always be depended upon to set just when wanted. So gradually the incubator was developed and perfected. So perfect has artificial incubation now become that with the latest improved machines there is no more risk to run than by the old mother hen process. The great majority of the incubators on the market are reliable and capable of making a good hatch. Much of the success of a hatch, whether under a hen or in an incubator depends on the fertility of the eggs and the skill of the operator.

The principal points to be watched in artificial incubation are (1) the selection of the eggs, (2) ventilation of the egg chamber in the incubator, (3) the application of



Pekins "At Home" on the Farm of Thos. McBean, Brookdale, Man.

are the result of a cross between the Italian barndoor fowl and the Valdano, or Leghorn, being a colored variety of the Marchigiano. At Ancona they come of all colors—black, white, red and gold. but, by careful breeding, the present type has been fixed, though now and again a cockerel will come with gold in the hockle and wing, thus betraying his descent.

"The Anconas as Layers.—On looking under the head of 'Anconas,' in Vol. 1, No. 4, of the Poultry Keeper Illustrator, edited by P. H. Jacobs, well-known to poultry fanciers in America and Canada, you will find the following concerning Anconas:

"No cold, however, stops egg production; frost and snow, bitter northeast winds, or driving hail is all one to them. The egg basket is never empty, and many are the petitions received during the winter for a few eggs just to keep our customers together from neighbors whose fowls have given up the battle. Anconas are not table birds, but they are brought out as hardy winter layers and prolific egg-producers. They are non-sitters, and after eight or nine months of steady laying they take a rest for a week or two, and then go on again until the moult begins. The result of this is the pullets are in full lay before the older birds stop."

"In the 'Feathered World' of April 7th, 1899, a correspondent asks to be recommended a breed as choice of layers. Mr. E. Cobb, F. Z. A., the poultry editor and a

cent. of very fine gravel, or coarse sand. Do not place grit by them and expect them to eat it, but mix it in their food and compel them to eat it, as it is the most essential part of the whole thing. Scatter this food on the board and place your ducklings on it and they will be busily eating within ten minutes.

Hay, chaff or finely cut straw should be used for the little birds until they are ten days old, when sawdust may be substituted if the former is not to be had. It is not safe to use sawdust too soon, as the little birds are apt to eat it. After the second day rolled oats and bran can be substituted. A little finely chopped rye or cabbage can be safely used at ten days old. At ten days, feed one-fourth corn meal, the rest wheat bran with a little rolled oats mixed in, not forgetting the grit, about ten per cent. of ground beef scraps or other animal food and a little green food. At six weeks old feed equal parts bran and corn meal with a little Quaker oats; feed also grit and beef scraps. At eight weeks old give one part bran to three parts corn meal to fatten them, with the grit and beef scraps, but not any green stuff.

The birds should be ready for market at ten weeks old and should dress to average from eleven to twelve pounds per pair at that age. The birds should be fed four times a day until six weeks old, then three times is sufficient. They should be watered

moisture, and (4) turning the eggs while in the process of incubation. One great advantage about an incubator is that it can be kept in the house, if necessary—anywhere, so long as the temperature does not go below the freezing point. It can be kept in a dry cellar or in a bedroom. Full directions accompany each incubator, so that with a little practice one can soon learn how to run it. The biggest trouble will always be in securing fertile eggs, as there has been no machine invented yet that can bring a chicken out of an infertile egg; even a hen can't do it. But little has been done with incubators by farmers in Manitoba, but as our population increases there will be a good opening for farmers to use them in the production of early chickens. There is even now a good opening.

Speaking of hens having sense, the Pacific Poultryman is responsible for the following yarn: We once owned a setting hen who came off her nest one morning sick, and walked up to another hen that was laying. After a confab of a few minutes the well hen took her place on the nest of her sick sister, staying there until she had hatched a clutch of chickens. The sick hen died the day the change was effected. The interesting part of the matter was that the foster mother left the nest daily and laid an egg. Next!

How to Test Eggs.

Testing eggs is now an art that can, with a little practice, be very accurately done by any farmer. Although most important in connection with the incubator, it is almost equally so when eggs are under the hen; all infertile eggs can be removed and used as feed for young chickens, whereas, if left in the nest they only become rotten and are wasted. Then, again, where two or more hens are set at the same time the eggs can be tested and all fertile eggs put under one or more hens and the others hens set again.

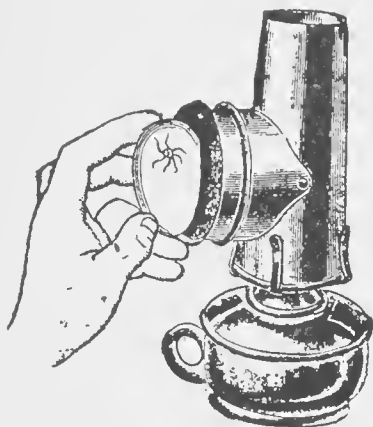


Fig. 1.

With an egg-tester like that in Fig 1, which has a tin top with a layer of felt cemented around the opening, against which the egg is placed, eggs can be tested in a dark room quickly and very accurately.

The general plan is to test the eggs on the seventh and again on the fourteenth day, but white-shelled eggs can be tested on the fourth day quite as accurately as the dark-shelled ones can be on the seventh day. Fig. 1 shows the starting of the germ, or how a fertile egg looks on the seventh day. When held against the light in a darkened room, with the big end up, a fertile egg should show a spider-shaped object inside, like that in Fig. 1. This indicates a perfect germ, which, if given proper treatment, will bring out a chick. If, however, the egg seems perfectly clear, when held to the light, it is infertile and should be taken out. These eggs are perfectly good and can be used in the house. Sometimes a germ starts and

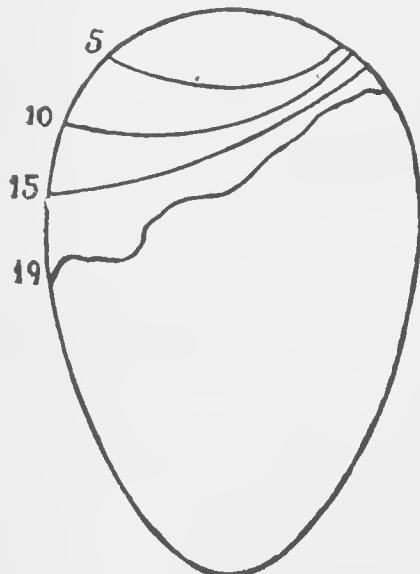


Fig. 2.

then dies. In such a case a black speck will be seen without any veins to it, or a ring or half-moon of red will be seen; all these should be removed and can be mixed with the feed for growing chicks.

As incubation proceeds the eggs become darker, and on the fourteenth day the chick can be seen to move. A test then will show any that have died since the first test was made. If the germ is found to float when the eggs are turned, and no veins can be seen, then the germ is dead, and such eggs should be removed.

Eggs contain all the food necessary to grow young chicks; therefore, they make good feed. The proportion to give them to hens is about one egg for every two hens. This will give some idea of the proportion in which they should be mixed.

Besides the germ, the air cell at the large end of the egg furnished some idea of the



Fig. 3.

changes that are taking place. A fresh egg only shows a very small air space, but this gradually enlarges as incubation proceeds. Fig. 2 shows how an air cell looks on the 5th, 10th, 15th and 19th days. Care must be taken to keep the eggs warm while testing them. A little practice will soon enable one to become quite accurate in testing. It is always well to turn the eggs around while held to the light.

Fig. 3, from "Success with Poultry," shows how an expert can sometimes tell quite accurately by holding an egg up to the flame of an ordinary lamp in a darkened room. The egg is held with the left hand and the top of the egg shielded with the right.

John Hamilton, of Neepawa, intends building a large poultry house on his farm east of the town and to go into the poultry business pretty extensively. He has secured an incubator and expects to make a specialty of B. P. Rocks. Messrs. Andrew & Hingley, south of the town, have also secured an incubator and intend to breed B. P. Rocks, S. L. Wyandottes and White Leghorns.

The egg season in Ontario opens rather favorably this year, prices being from 1c. to 1½c. higher than at the same time last year. Present prices are 11 cts. to 11½ cts. Competition between picklers is said to be the cause of this. Owing to the late season and bad roads egg-gatherers were slow in getting out, and now the picklers are anxious to fill up their vats before warm weather comes on.

Why not try a skip of bees this season? They will add a pleasant variety to the table in the way of honey, and thus help to make home more enjoyable. Mr. Bedford found his bees feeding on 65 different varieties of plants. The willows provide the first honey in the spring. The gum weed makes good honey. Mr. Bedford found his hives at Brandon averaged him over 55 lbs. of honey a piece.

Louise Bridge Poultry Yards

UNCONQUERABLE.

My noted strain of Single and Rose Comb White Leghorns, White Wyandottes and Black Spanish have again proved their superiority, winning at the Brandon Poultry Show, February, '99, 15 first prizes, 10 seconds, 4 thirds, 3 Silver Cups and Gold Medal; also \$5 sweepstake for 4 highest-scoring birds in the Show. I exhibited 39 birds, with an average score of 94¼ points per bird. A record like the above was never equalled in Manitoba. I have mated up the finest pens of the above varieties that can be found in America. Eggs from these grand pens \$3 per 13, \$5 per 26. B. P. Rock Eggs \$2 per 13. No more White Wyandotte Eggs for sale. Have all orders that I can possibly fill. Address—

GEORGE WOOD,
Louise Bridge P.O., Winnipeg, Man.

Oak Grove Poultry Yards,

LOUISE BRIDGE P.O., WINNIPEG, MAN.

A few pair of young Pekin Ducks from imported and prize-winning stock, at \$4.00 per pair.

My Turkeys are all sold, except those required for breeding stock. Am breeding from two of as fine yards as there are in Manitoba.

I am sole agent for Manitoba and N.W.T. for GEO. ERTLE & CO.'S VICTOR INCUBATORS and BROODERS. These machines have copper tanks, moisture pans, thermometers, egg testers, egg turners, regulators and lamps. Everything is complete, and every machine goes out with a guarantee that it will do as represented or money will be refunded. Send for 1899 Circular.

Address—CHAS. MIDWINTER,
Louise Bridge P.O., Winnipeg.

BUY WINTER LAYERS.

LIGHT BRAHMAS.

Pen No. 1. Were purchased and selected by Judge L. G. Jarvis, of Guelph. Eggs \$2.50 for 13.

Pen No. 2. Eggs \$1.50 for 13.

I am importing ANCONAS, the greatest winter layers known. A limited number of sittings at \$5 per 13 after April 25th.

ANCONA POULTRY YARDS, Box 562, Winnipeg.

EGGS FOR HATCHING, \$2 for 13, from 1st Prize stock in Barred Plymouth Rocks, S. L. Wyandottes, Black Minorcas, S. C. B. Leghorns. Also some A1 S. L. Wyandotte stock for sale. Sixteen birds (scored by Shellabarger) scored from 88 to 93½. Only three scored less than 90 points. A.J. Carter, Brandon, Man.

BRONZE TURKEY EGGS

Chas. Midwinter's stock. Eggs \$1.50 per 9.

OLIVIA ROUTLEDGE, Miami, Man.

G. H. Grundy, Box 68B, Virden, Man.,

Breeder of Exhibition B.P. Rocks, S.L. Wyandottes and B.R. Game Bantams. I have mated this season four pens of B.P. Rocks and two of Wyandottes. Pen A in B.P. Rocks mated for cockerels; pen headed by imported cock. Pen B mated for pullets, and headed by 1st prize cockerel at Man. Poultry Ass. Show at Brandon in Feb. Pen C mated for pullets, and headed by an imported cockerel from which I look for grand results. Pen D mated for cockerels, and headed by my ideal cockerel scoring 92½ by Judge Shellabarger at Brandon, the highest scoring B.P. Rock in the Show. Wyandottes mated for best results. Can furnish Eggs from the above pens at \$3 per 13, \$5 for 26. If you want the best at fair prices, here they are. Satisfaction guaranteed.

WHITE PLYMOUTH ROCKS.

Winning at last Exhibition of Manitoba Poultry Association four firsts and two second prizes. If you want good birds, write for prices.

S. B. BLACKHALL,
696 McMicken St., Winnipeg.

J. TODD & CO.

Breeders of pure Stock in the following lines of Poultry:—

Barred and Buff P. Rocks. Golden and Silver Spangled Hamburgs. Black Langshans. Eggs, \$2 for 13; \$3.50 for 26.

Stock for Sale. Will help customers to get any other Stock required.

J. TODD & CO., 457 Henry St., Wpg.

A New Poultry Man at Guelph.

L. G. Jarvis, well known to poultry men in Manitoba, has resigned his position as manager of the Poultry Department at the Ontario Agricultural College. His place has been filled by W. R. Graham, a young man only 24 years of age. He was brought up on a farm near Belleville, Ont., and has always been a lover of poultry, in fact it is stated of him that at three years of age he would go about with a hen under his arm. At a very early age he was given charge of the farm poultry by his father and allowed a portion of the proceeds as pocket money. In this way he became interested in the work and began to read poultry books and journals at an early age. His first experience was with common stock; but, after a time, he imported some pure bred birds from New York State and commenced work on a larger scale, selecting his stock specially with reference to such utility points as egg production, early maturity, etc., and laying less stress on fancy points. In fact, from first to last Mr. Graham has been a utility rather than a fancy poultryman. He did well with his thoroughbred stock at the local shows and especially in the financial results at home till October, 1890, when he entered the Ontario Agricultural College. At college he soon became noted as the poultryman of his year—or rather of all the years—and as a consequence was nicknamed "chicken" throughout his course.

Mr. Graham completed his college course and received the degree of B.S.A. in June, 1894; and almost immediately afterwards went to work with James Rankin, of South Easton, Mass., U.S.A. Mr. Rankin is one of the largest and most successful poultry men in America. He raises about 10,000 ducks and 1,000 chickens per year for sale in Boston and other eastern cities. Mr. Graham had complete charge of Mr. Rankin's work for about twelve months, after which he returned home, bought two or three incubators, and commenced the raising of chickens and ducks for the Montreal market. In this he has been quite successful, as also, in the production of eggs during the winter months.

Hence it will be seen that Mr. Graham is an enthusiastic and successful poultryman. He has studied all the points and peculiarities of the different breeds of fowl, but has given most attention to the practical part of the business, not working for shows so much as for the cheap production of eggs and fowl suitable for the markets of the country; and we may add that this is what is wanted at the Agricultural College.

A plant for evaporating eggs and making egg powder will be in operation in Winnipeg in a week or so. When fully equipped the plant will be capable of evaporating 40,000 eggs a day. It is also the intention to evaporate vegetables. This should give poultry raisers a little idea of the faith some men have in the possibilities of the west. At least this plan should supply a market for all the eggs that can be raised. The egg powder will be marketed in British Columbia and Yukon mining centres.

It requires a visit of inspection to appreciate the extent to which John Longmore, of Holland, is engaged in the breeding of pure-bred poultry. At the present time he has four incubators, of an average capacity of 100 eggs, in operation, and is meeting with excellent success, as a large number of especially thrifty chickens amply testify. He claims great superiority in the results obtained from artificial hatching over the old method and would not return to the hens under any circumstances. In his extensive breeding pens Mr. Longmore has the following varieties, the standard of excellence being so high all through, includ-

ing several prize winners from the large fairs in the east, as to make special mention of any one breed very difficult: Buff Cochins, Silver Laced Wyandottes, Brown Leghorns, White Wyandottes, Black Spanish, Black Langshans, Barred Plymouth Rocks, White Leghorns, Light Brahmas. In addition to the above he also breeds Pekin ducks and Toulouse geese. We cannot too strongly recommend a visit to the Reliable Poultry Yards to anyone interested in thorough-bred fowls. A stronger collection would be difficult to find in the province.—Observer.

THOS. H. CHAMBERS

Importer and breeder of

Exhibition Barred Plymouth Rocks, Black Minorcas, Black Hamburgs, S. L. Wyandottes, Cornish Indian Games, S. C. White and Brown Leghorns.

Eggs \$2 per setting.

T. H. CHAMBERS, BRANDON, MAN.

The Reliable Poultry Yards,

12TH ST., BRANDON, MAN.

Importers and breeders of standard bred poultry.

EGGS FOR HATCHING

of the following varieties at \$1.50 per 13: L. Brahmas, B. P. Rocks, Indian Games, S. C. W. Leghorns, and Buff Pekin Bantams. All my prize-winners are in the above pens. W. and S. L. Wyandottes, Black Minorcas and S. C. Brown Leghorns, eggs \$2.00 per 13; \$3.50 per 26. Also Golden Pheasants but no eggs. No stock for sale until after hatching season.

W. H. Garside, Mgr., Box 299.

EGGS! EGGS!

BLACK MINORCAS AND GOLDEN WYANDOTTES.

At Poultry Show, Brandon, 1899, I won on Minorcas—1st Cock, 1st Cockerel, 1st Pullet, 1st Breeding Pen. Wyandottes—1st Cock, 2nd Hen, 1st and 2nd Pullets. Minorcas, best Pen, \$3; 2nd Pen, \$2. Wyandottes and Black-breasted Red Bantams, \$2.

THOS. REID, 293 Lizzie St., Winnipeg.

Single - comb White Leghorns.

SPECIAL OFFER.

After June 1st will supply Eggs for Hatching from my high-class White Leghorns at \$1 per setting of 13. Barred Plymouth Rocks, 75c. per setting of 13.

W. A. PETTIT,

Acme Poultry Yards, Boyd Ave., Winnipeg.

BLACK AND PARTRIDGE COCHINS.

HOUDANS & RED GAME BANTAMS.

Eggs from above stock \$2 per 13. Have also a few choice Embden Geese and Cochins Cockerels, as well as Pekin Bantams. The above stock took 33 prizes at Manitoba Poultry Show, February, 1899.

W. Anderson, Box 368, Brandon, Man.

HIGH-CLASS POULTRY & PET STOCK.

Buff Rocks, S. C. Buff Leghorns, Silver Spangled Hamburgs, Cornish Indian Game, Black Red Game and Golden Seabright Bantams. Eggs from all of above stock at \$2 for 13. Also Pigeons—Black Fans, Black Carriers, Blue-pied Pouters, Short-faced Tumblers, Oriental Frills, Homers, Red and Black Jacobins, and Guinea Pigs.

H. W. Balls, Portage la Prairie, Man.

Eggs for Hatching.

White Wyandottes, \$2 per 13. Barred Rocks, S. C. W. Leghorns and Black Javas, \$1.50 per 13 for balance of season. A limited number of Embden Geese eggs at 40c. each. 200 prizes in five years. Exhibited 24 birds at Brandon's late Show—prizes on 19; also two specials, including Silver Cup for best exhibit in American Class.

JOHN KITSON, Macdonald, Man.

B. Plymouth Rocks.

When in need of Eggs for Hatching, don't forget that we can supply you with them at \$3 per 13, or \$5 per 26. Our 18th Annual Circular and Price List is free, and fully describes our stock. You have but to address me.—F. H. Shellabarger, Box 57, West Liberty, Iowa, U.S.A.

Light Brahmas, Buff Cochins, B.P. Rocks, W. Wyandottes, Houdans and Pekin Ducks.

Stock for sale. Eggs \$2 per 13; special price for larger quantities. No pains or expense has been spared in getting together the best stock obtainable. Our pens are headed by first prize birds at Winnipeg Poultry Show and Exhibition. For best results address—

VIRDEN POULTRY CO., Box 355, Virden, Man.

WHITE P. ROCKS EXCLUSIVELY.

Winner of the Lieutenant-Governor's Cup and Gold Medal, Manitoba Poultry Show, 1899, for best Pen any breed. Eggs from the above birds \$2 per doz.

T. M. PERCIVAL, Brandon, Man.

EGGS FOR HATCHING.

From the following varieties of Standard-bred poultry—B. P. Rocks, White & Brown Single Comb Leghorns, \$1 per Sitting. White-face Black Spanish, Black Langshans, Buff Cochins, Light Brahmas, S. L. Wyandottes, \$2 per Sitting per 13 Eggs. Toulouse Goose Eggs, 40c. each. Imperial Pekin Duck Eggs, \$1 per 11. Eggs half price after June 1. Fertility guaranteed.

RELIABLE POULTRY YARDS, HOLLAND, MAN.

John Longmore, Prop. Correspondence solicited.

LIGHT AND DARK BRAHMAS, SILVER GREY DORKINGS, WHITE PLYMOUTH ROCKS.

EGGS \$2 per 13. The above birds are all of the very best stock, winning 10 prizes at Manitoba Poultry Show, 1899. The Dorkings have never been beaten.

A. MUTTER, Brandon, Man.

Light Brahmas, Barred P. Rocks, Indian Games, Black Minorcas, Pekin Ducks.

My birds are all from high-class imported stock. Satisfaction guaranteed. EGGS \$1.50 per 13.

REUBEN CLIFFORD, Elkhorn, Man.

B. P. ROCKS.

Eggs for Hatching.

I can supply Eggs from FIRST CLASS STOCK at \$2 per setting. I have some of the best birds in Manitoba, and can guarantee a large percentage of fertile Eggs. E. B. LEMON, care of Osler, Hammond & Nanton, Winnipeg.

WINNIPEG POULTRY YARDS.

HOUDANS AND GOLDEN WYANDOTTES.

At Poultry Show, Brandon, February, 1899, won on Houdans 1st Cock, 1st Cockerel, 1st Pullet, 1st Pen. Special for best display. Numerous prizes won last five years. Have also grand pen Golden Wyandottes. Eggs from either breed \$2 per 13. Choice stock for sale. Address—S. Wiae, 833 Ross ave., Winnipeg, Man.

B.P. ROCKS EXCLUSIVELY

Hawkins' strain. Have two choice breeding pens Eggs at \$2 per 13.

Carberry Poultry Yard. Wm. Atkin, Box 27.

Mmth. Bronze Turkeys
Toulouse Geese
Pekin & Rouen Ducks
S.L. & W. Wyandottes
B. Plymouth Rocks

Eggs

These are the varieties our experts advise all to breed, being well adapted to our climate and most saleable in our markets. I have the best obtainable in these varieties, and will supply eggs at same prices others charge. My Turkeys are headed by two mammoth gobblers weighing 42 and 46 lbs., hens weighing up to 24 lbs. Geese 45 to 50 lb. pairs. Ducks mated with drake, pronounced by Butterfield an extra grand bird, with great length of hack and deep keel. My Turkeys, Geese and Ducks have won most first prizes and medals at all leading shows in strong competition. If you want the best from acclimatized stock, write me, and I will mail you free a catalogue with photos of birds and full particulars, also a sure and cheap receipt for destroying lice on birds and in houses. If you are in a hurry, send the cash you wish to invest, and I will give you full value.

MAW'S POULTRY FARM, WINNIPEG.



Dairying.

By R. A. Mitchell, Edmonton, Alta.

Success in dairying does not altogether begin with the milk after it is drawn from the cow, but to be successful the secret depends a great deal on the selection, care and management of the dairy cows.

Here are a few points which characterize a good milch cow. The animal must be fine, with mellow, though rather thin skin; the head small, face long and straight; the horns should be fine, short and somewhat curved. The eye must be bright, yet placid; avoid a wild-eyed cow, or one with a dull, heavy eye. The barrel, thighs, pelvis and rump should be roomy, and the udder full in form.

Cows should be well fed at all times, comfortably housed in cold weather, spring, fall or winter, and treated with the utmost kindness. Experience shows that when a cow is beaten, kicked, or by any means excited, she gives less milk. In some parts of France milkmaids who can sing get almost twice as much pay as those who cannot. Singing in a low sweet voice, while milking, seems to soothe and calm a cow.

It is necessary that cows have plenty of succulent food during the milking season. Succulent food may be mentioned as plenty of good hay, once in a while straw for a change, a small quantity of bran mixed with ground oats, roots (carrots and mangolds). A little salt should be given every morning, it may be either mixed with the meal or given by itself. Do not give them rock salt to lick, but good granular salt. In the summer a trough should be placed in the pasture, and a small quantity of salt deposited therein every morning.

At all seasons of the year a good supply of pure fresh water, at a temperature of about 40 degrees, should be accessible to the cows. Roomy, well-ventilated stables are necessary for the health of the animals. The stables should be well cleaned every day, and bedded with clean, dry straw.

Absolute cleanliness should be practiced by the milker. Before starting to milk brush the cow's udder well, and rub with a damp cloth. Then see that the hands and nails are perfectly clean. Have a large white linen apron to put on over clothes while milking; this should be frequently washed. The milker should then perform his duties as quickly and thoroughly as possible, and strain the milk immediately after it is drawn from the cow, in order that all impurities may at once be removed before they dissolve and become incorporated with the milk. Milk-pails should be made of tin, as wood has a tendency to accumulate germs or other impurities. All milk and cream vessels should be well washed and scalded with boiling water, and exposed to the fresh air for several hours.

The best plan for setting milk is in deep cans or creamers, as they are generally called. These should be set in a tank of ice cold water and left for a period of from twelve to twenty-four hours. Then remove the cream; do not allow it to sour before skimming. All the cream for each churning should be placed in one vessel, and as more cream is added, stir it well from the bottom. In the summer do not allow the cream to stand more

than a couple of days before churning. A quart or more of sour cream should be kept on hand, and added about twelve hours before churning to the sweet cream. The cream should be well stirred every now and then and kept at a temperature of about 60 degrees.

The temperature at which cream should be churned is from 57 to 60 degrees in summer and from 60 to 65 degrees in winter. Churn till butter is gathered into particles about half the size of a grain of wheat, then add one-tenth as much water as there is milk in the churn. Continue churning till the particles are about twice as large as before. Then draw off the butter-milk and add pure cold water in its place. Churn for a short time. Butter should be washed till the water comes off clear of milk.

The butter should be taken from the churn in a granular state, then salt it at the rate of three-quarters to one ounce of salt to a pound of butter. Work it just enough to fairly distribute the salt. Then let it stand from twelve to twenty-four hours, before working it for the last time. In regard to the quality of salt to use in the dairy, use only the best dairy salt, of either English or American make.

Where there is a good market and butter can readily be disposed of, the best way to do it up is to make it into pound prints and wrap it in parchment paper. If this is not convenient it should be packed in crocks, or firkins made of oak, or similar hard wood, but always use uniform, clean and neat looking packages. For packing, have the butter at about 60

degrees, it is then firm, yet not hard. First rub the package bottom and sides with salt—just what will adhere. Put a quantity of butter in the bottom of the package and press down firmly, do not rub, but press; thus you make all firm and exclude the air. Continue till the package is filled, all but within an inch of the top. Lay on a cloth—a piece of thin white cotton will do—cut it an inch longer than the package, wet this with brine, and work the edges down smooth, cover this with a quarter of an inch of salt, cut another piece of cloth the same size as before, and lay it on in the same manner. Now put on the cover and the butter is ready for market.

Having described the mode of making butter, I will tell you one instrument that plays an important part in the dairying, and that is the thermometer. You will see that I have frequently mentioned the temperature necessary to set the milk, of the cream for churning, the water added to wash the butter and the right degree for packing. How many mistakes we may avoid, that we otherwise would make, were it not for the thermometer.

I would advise every dairyman to put up in the winter a large supply of ice for use in the hot days of summer. There are days then that without ice it is an impossibility to make nice firm butter. By paying attention to these suggestions a dairyman can attain most successful results.

Does your dairy herd represent your dairy knowledge? Shouldn't it?

A CHALLENGE!

A person drowning will grab at a straw to save himself, and, judging from the article or advertisement of R. A. Lister & Co., Limited, appearing in "THE NOR'-WEST FARMER" of May 5th, they evidently are in a like position as the drowning man—at least, we think that is the most charitable way of looking at their reckless statements. As for the story from Elgin, we will say that the source from which it is taken is in itself enough to question its accuracy and veracity. But for all that, such an accident as described may occur to any piece of machinery forced beyond its capacity or carelessly managed, and the genius who fathered the article referred to knows very well that neither the shaft on a De Laval nor the hooks on a Melotte would suddenly twist off "like an onion from its stem" unless by gross and criminal neglect. We should, however, have paid no attention to this tale had it not obviously been used to color a string of malicious falsehoods contained in an article in the same issue under the heading "Alexandra and Melotte Cream Separators." To start with, in that production the price of the "Alpha" used in the Dairy School is stated to be "something like \$500," whereas the other machines sell for \$75 to \$100 or so." This statement is untrue so far as the price of the "Alpha" is concerned, as that particular size is sold for \$375 f.o.b. Winnipeg. It is misleading and unfair as to the comparison with the "other machines," so far as the one is a power machine, the other small machines have to be turned by hand. Again they say—"both the Alexandra and Melotte have 'beat' the 'Alpha' time and again under equal terms." That statement is an unmitigated, deliberate and reckless perversion of actual facts, and untrue in the highest degree. We have not the time nor will we take the space to print any of the numerous testimonials from previous trials refuting such rash assertions, but we herewith challenge R. A. Lister & Co. to submit to a public test trial between the "Alpha" Baby Machines, any size, and the corresponding size of their Alexandra and Melotte machines, at some farm to be agreed upon, any time between now and June 15th; and let it be further understood that if this challenge is not accepted, it is a confession on the part of the Lister people to the untruthfulness of the statements referred to above.

THE CANADIAN DAIRY SUPPLY CO.

Per A. LINDBACK, Manager.

Composite Milk Sampling in Creameries and Cheese Factories.

By Frank Dewhirst, Wisconsin Dairy School, Madison, Wis.

In the modern creamery or cheese factory, where the Babcock test is used in determining the fat contents of milk as a basis for payment, the composite test is the method usually followed. A pint or quart jar is provided for each patron, and numbered with the same number as the patron has on the milk recording sheet. Ordinary fruit jars with metal threaded covers can be used. Into each bottle is placed a small quantity of some preservative such as potassium bichromate corrosive sublimate or borax. The writer prefers potassium bichromate, using about as much as would half cover a dime to preserve a pint for a week or ten days.

The bottles are placed in a rack near the weigh can, and each morning when the milk is weighed in, a small sample is taken with a dipper (1 oz.) or a Scovill sampler. The sample must be taken immediately before the cream commences to rise.

This sampling is continued each day for a week or ten days. Every time a fresh sample is added to the milk already accumulated, the bottle should be given a horizontal rotary motion, so as to mix the cream which has risen with the milk again. The operator should be careful to leave no cream adhering to the side of the bottle, because this will dry and cannot be again mixed homogeneously.

Keep the bottles in a cold dark place and be sure to keep covers on to prevent loss by evaporation.

In testing composite samples, pour the milk from one vessel to another often enough to mix the cream through thoroughly. Composite samples need a little more mixing than do fresh samples. The samples are tested in the usual way, the only precaution necessary being to observe that the precipitation, when the acid is added, is all dissolved, because it dissolves slower than with fresh milk.

The composite test takes the place of a separate daily test and gives an accurate record of the average quality of milk brought during the sampling period.

To calculate weight of butter fat delivered by the patron, multiply the total weight of milk delivered during sampling period by the test of the composite sample, then divide by 100.

Answers from Butter Makers.

The committee in charge of co-operative experiments in connection with the Agricultural and Experimental Union, which is composed of students and ex-students of the Agricultural College, Guelph, Ont., sent out a number of questions to butter-makers through the province. The following are the questions with a summary of the answers sent. It will be interesting reading to butter-makers in the west, also to farmers, as showing that the returns from creameries here are sometimes considered very low, yet the prices in Ontario are not any better. If the farmers there can make butter at 13 cents from the creamery profitable, why cannot western farmers do the same, or do they want too much?

Q. What are the chief faults to be found with the milk or cream delivered at your creamery?

A. Over ripe, dirty, lack of aeration, cream not cooled from skimming stations. In cream gathering creameries, fermented cream, causing a cheesy flavor in the butter during hot weather.

Q. At what temperature do you separate milk?

A. 75 to 100 degrees.

Q. How do you heat milk?

A. Tempering vat, live steam, warm in vat and finish in pan.

Q. How do you cool your cream?

A. In vat, cone-shaped cooler, pan and ice water, ice water in vat.

Q. What percentage of fat do you find in skim milk?

A. Trace, .05, .2, .1, .01, .02 to .08, .04 per cent.

Q. What per cent. of fat in butter-milk?

A. Trace to .4.

Q. Do you test skim milk and butter milk daily?

A. Only one does so. Others test from twice a week to once a month.

Q. How do you ripen your cream?

A. Cool to ripening temperature (65 to 70 degrees), and when the acid develops the cream is cooled to churning temperature. One man reports cooling to 50 degrees, then warming to 65 degrees, until it thickens, and then cooling again to churning temperature, 58 degrees.

Q. What percentage of starter do you use?

A. Five use no starter. Others use from 7 to 30 per cent.

Q. What is your test to know when cream is ripe enough for churning?

A. Appearance, experience, judgment, taste and smell.

Q. At what temperature do you churn?

A. 50 to 60 degrees.

Q. How long do you take for churning?

A. 30 to 60 minutes.

Q. Do you wash your butter?

A. Some wash once and some wash twice.

Q. Do you work your butter once or twice?

A. Separator creameries work once, and cream gathering twice.

Q. What kind of package do you prefer?

A. Most makers prefer the 56 pound square box, lined with paraffine wax. One cream gathering creamery uses the 112

pound firkin, made air tight and water tight.

Q. At what temperature is butter held in storage?

A. 32 to 50 degrees.

Q. What price is charged for making butter?

A. 3c. to 4½c. per pound.

Q. What price is charged for hauling the milk?

A. From 5c. to 10c. per 100 pounds.

Q. What price was paid patrons per pound of butter?

A. 13c. to 17c.

Q. What improvements would you suggest?

A. Inspection of creameries, interchange of ideas, co-operation in hauling the milk, better care of the milk, coolers at skimming stations, regular shipments to British markets, mechanical refrigeration, and education of patrons. One maker suggests divorcing the man and wife in some cases, and then furnish the better one with a progressive helpmate. Another, ironically, suggests the "blowing" process of making butter as a remedy for the ills of the creameryman.

One maker in a cream gathering creamery says in a letter which accompanies his report: "have no end of trouble with the patrons, at least with some of them, regarding the test of their cream. Some can make from 10 to 30 pounds more butter than I can from their cream, and they accuse me of stealing it. I have found that the actual butter churned corresponds with what the test calls for within two or three per cent—sometimes short and sometimes long."

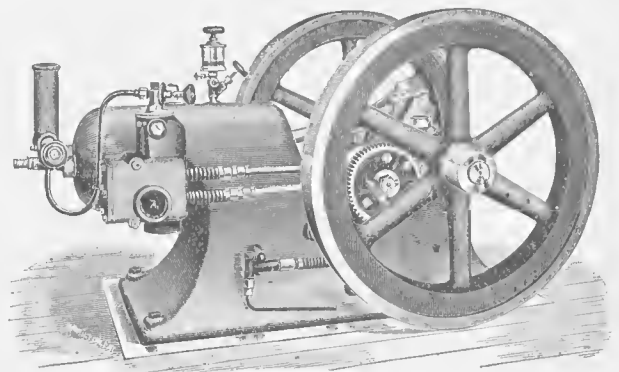
A maker in a separator creamery adds this to his report: "Some farmers think anything is good enough for the creamery. If the milk is sent home, in three or four hours that farmer will come to the creamery with blood in his eye, and want to know why the milk was returned. If the butter makers of Canada were to send all milk home which is not in condition to make fine butter, three-quarters of the creameries would be closed for want of clean milk."

THE "MODEL" GASOLINE ENGINE.

Simplest.

Easiest
to Start.

No Danger.



In rural districts the GASOLINE ENGINE affords all the conveniences that electricity does in large cities. We offer the **BEST** and **CHEAPEST** Engine made, and install them with our own experts. The advantages of buying from a home firm we need not point out to you.

CREAM SEPARATORS.

The sales of our "ALEXANDRA" and "MELOTTE," in all parts of the British Empire, so far this season are unprecedented, which is the best proof of their superior excellence.

For full information and prices on same, or on anything required in the manufacture of milk into butter or cheese, apply to

R. A. LISTER & CO., Ltd.

Works—DURSLEY, ENGLAND. 232 King Street, WINNIPEG. And MONTREAL.

Cream Testing Station.

The Maine Dairymen's Association have taken a new method to overcome the suspicion with which patrons look upon testing of the samples of cream at the various creameries. A state testing station has been established at a central point and to this station the individual samples from the various creameries will be sent for analysis. Samples will be kept at the factories on the composite plan and sent to the testing station at regular intervals, the tests made there and the results returned to the factory. This takes all the work and suspicion off the local butter-maker and places the test in the hands of an expert engaged for the purpose of testing the samples. It will be a cheap plan and its working will be watched with great interest by dairymen in all parts of the continent.

A Simple Cure For Warty Teats.

Sometimes warts on cows' teats cause inconvenience in milking and it is therefore desirable to get rid of them. The following clipping from the Farmers' Gazette of Ireland will be of interest in this connection:—

"I notice that in your last issue a querist asks for your advice with regard to the removal of large, rough warts from the teats of one of his cows. The remedy which you prescribe—dressing with lunar caustic—will undoubtedly effect the desired object, but if you will allow me to say so, I think your correspondent will find it an improvement upon the plan which you recommend, if, after smearing his fingers with castor oil, he draws the warted teats gently every day for a few weeks, and then rubs the udder with a little of the oil, so that it will run down along the teats. In this way he will find that the warts can be completely got rid of without any burning of the teats, or any pain to the cow. No one who has not tried it can form an idea of the effect which castor oil has when externally applied on the mammary glands and the teats."

Profitable Dairy Work.

Forty miles east of Toronto F. W. Hodson, Superintendent of Farmers' Institutes for Ontario, has a dairy farm with about 30 selected cows, mostly Ayrshires, and managed by D. Drummond, long well known as a front rank Ayrshire breeder. Mr. Hodson's specialty is cream for the Toronto market, which is sent in daily by train, the daily shipment being about 10 gallons. The cream is separated and the warm skim milk is at once fed to calves. In this way good calves can be raised at small expense. Ensilage, clover hay, bran and gluten meal are the feeds used and a prize Ayrshire, Kelso Boy, is at the head of the herd. Good stock, skilled management, and good feed supplied to good purpose, indicate a pretty successful prospect for the owner.

Subscriber, Newdale, criticises the statement in February 20th issue of The Farmer, that Mr. Barre is the only one who pays by Babcock test for milk and cream. Mr. Barre still maintains that he alone pays by test for milk, and that every cheese factory still works on the "pooling" system by which, in the cheese factory, at all events, rich and poor milk are both paid for at the same price per gallon. The creameries throughout the province pay according to the percent. of butterfat in the cream, not in the milk. Subscriber seems to confound this fact.

The village council of Virden has just passed a by-law to regulate the dairies and milk supplies of that town. No one will be allowed to sell milk without a license. Every cow from which the milk is to be supplied must previously have passed the tuberculin test. Provision must be made for a proper water supply and the stables must be cleaned out twice a day. No milk house will be allowed within 20 feet of a closet or manure heap. Of course the cleanliness of all vessels used is called for, and if the license holder refuses to submit to the regular inspection of his

stock and premises by the persons appointed by the council his license may at once be cancelled.

The farmers of Prince Edward Island have a money interest in their local cheese or butter factory and consequently they are careful to furnish only good milk in order to increase their profits.

Old cheese is pretty well cleaned up both in Canada and in England, where most of our cheese is consumed, hence the prospects are bright for good prices this season

When buying,
why not
get the Best?



MIKADO Cream Separators.

Out of many testimonials received, the following have just come in:—

Brightside Farm, Strathewen P.O., Man.,
Feb. 25, 1899.

I wish to certify that I am thoroughly satisfied with the Mikado Cream Separator. I purchased it last summer, after a trial of two other much-lauded machines, and I found the Mikado the easiest to operate, the easiest to clean, and by far the simplest and cleanest skimmer. As to durability, I am satisfied that it will last as long as anyone can expect a machine to last; with the other machines the operator would soon wear out. My little boy of six can easily run the Mikado; a strong man would be required for one at least of its rivals.

HENRY NEWMARCH.

Any child can run the Mikado, and it has been run twice a day since I have had it.—H.N.

Woodlands, Man., Feb., 1899.

In answer to your enquiry as to how I like the Mikado Separator, I would say if they are all like the one I got they are just the thing.

We tried 100 lbs. of milk by the gravity process, and received 3½ lbs. of butter; then I weighed 100 lbs. of milk and put it through the Mikado Hand Separator, and received 4¾ lbs. of butter, a gain of 1½ lbs. of butter. They are very easily cleaned, and make less noise than the—

Yours truly, Mrs. GEO. BROADFOOT.

Mrs. Broadfoot gives the name of another Separator, but we have omitted it.

Manitoba Cream Separator & Supply Co.,
157 BANNATYNE ST., WINNIPEG.

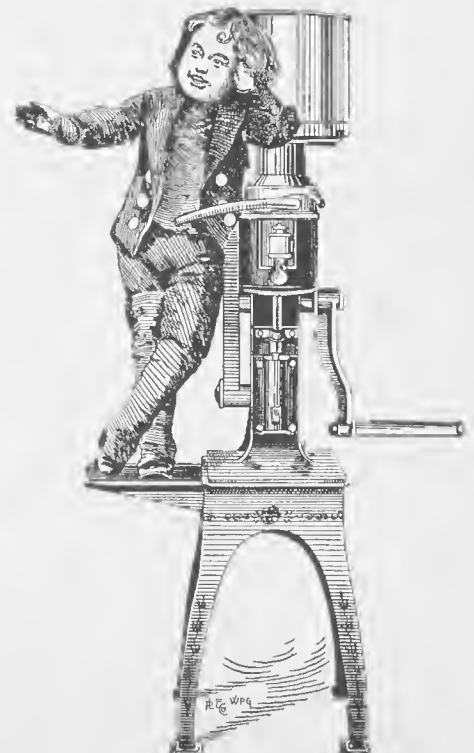
The Canadian Dairy Supply Co.

It is time the farmers of Manitoba and N.W.T. should commence to realize that when a Mikado or Alexandra Machine is thrust upon them they are getting the poorest Machine made—Machines which have got no market elsewhere, but are hurled on the innocent and unsuspecting farmers of Manitoba and the N.W.T. on the plea of its cheapness, while, owing to their cheap and faulty construction, inferior skimming and heavy operation, it is notorious the dearest Machine a man can buy.

Wherever in the East or anywhere else those Machines have been forced to a trial test, they invariably have been beaten. They are to-day sold nowhere else in this hemisphere to any extent but in Manitoba. Farmers, cease being fooled! When they ask you to buy a Mikado, Alexandra, American, or whatever name they call it, insist on a test on your place between such Machine and the "ALPHA BABY," and you will be bothered no more.

THE CANADIAN DAIRY
SUPPLY CO.,

236 King Street, WINNIPEG.



Skimmings.

A badly cared for cow will not drop a good calf.

Profit leaving cows are the foundation of their owner's intelligence.

The cheese factory at Stuartburn is now opened. Mr. Leafer is the maker.

A better dairy calf can be raised on skim milk than on whole milk and at much less cost.

There is no best breed of cows. As much, or more, depends on the feed and the owner as on the breed.

J. Bousfield & Co. made 2,300 lbs. of butter at their North Brandon creamery at Douglas, during the first half of May.

The Regina Creamery will this year be handled by S. Taylor, who has been maker at Indian Head for the last two years.

Pure bred dairy cows will become no better than scrubs if the care and feed necessary to successful returns is withheld.

Cream will not rise on clotted milk, because when it becomes thick the little fat globules are prevented from getting through to the surface.

It is stated that the effect of garlicky pastures may be largely overcome by taking the cows off the pastures two or three hours before milking. It's worth trying.

For the nine months ending with March the exports of U.S. dairy produce show a decline of four and one-half millions lbs. of butter and fifteen million lbs. of cheese.

Any cow that has not been worked and fed to her full capacity can be very much improved by good feeding and care; but it will take one year and perhaps more to do it.

T. C. Rogers, for many years instructor in butter-making at the Ontario Agricultural College, has resigned to accept the position of general agent for the National Cream Separator Co.

It is said that in one week 1100 tons of butter were shipped out of Melbourne, Australia, most of it for the English market. This is a rather tall story and wants further confirmation.

Family Doctor.—You must let the baby have one cow's milk to drink every day. "Very well, if you say so, doctor," said the perplexed young mother, "but I really don't see how he's going to hold it all."

Wherever you find an up-to-date successful dairy, you find an up-to-date live farmer at the back of the business. It is first the man, always. No successful dairy herd just happens to come together. It is made by some man.

It will pay to set the boys testing the cows. Allow them a liberal share of any increase they may make in the milk yield for their share of the work. Interest them in dairying. They will have to do some of it when they are old enough to manage a farm. Train them now.

A well born calf is very important to successful dairying. The calf intended for the dairy should be kept growing and fed plenty of coarse feed to develop a large stomach, thus having the capacity to handle large quantities of food products when she comes to be a milker. If developed on concentrated feeds this ability will be much inferior.

Besides the great output of butter from the Danish creameries, that country made in 1897-8 about 26,000,000 lbs. of margarine and imported 5,280,000 lbs. from abroad. It would be an interesting trade secret if all this fictitious butter could be followed to the points of its ultimate consumption. The wholesalers in England who sell prime Kiel butter, could perhaps tell, if so disposed.

In cleaning a separator it is best to wash at first in warm water, not in hot water; not hotter than the hands can bear, because boiling water coagulates the slimy matter, which then sticks fast to the surface of the bowl, and is very hard to remove. Wash the parts quickly in warm water, using a stiff brush in the corners where required and then steam thoroughly or plunge into boiling water for a few minutes; then wipe lightly the thin parts, and place in a dry, warm place, where the heavier parts will dry themselves thoroughly from the steam or hot water.

Dr. Pasbourg, a Continental expert, has succeeded in producing a powder from milk which contains all the original properties of the natural article. Its composition is as follows:—

Moisture	5.4
Fat	27.3
Milk sugar	35.3
Caseine	26.2
Mineral matter	5.8

In use sufficient water is added to bring the mixture to the condition of new milk, and which by boiling is said to closely resemble boiled or sterilized milk. It remains to be seen whether this material will find its way into commerce.

Hasten slowly ("festina lente") seems the favorite maxim with old country legislators. The British Parliament has decided not to interfere with the coloring of margarine to make it as like as possible to genuine butter. The same admirable moderation has been observed with reference to tuberculosis. In drawing up rules for city corporations dealing with dairies subject to their control, only cows manifestly affected with tuberculosis of the udder are to be outlawed. The Local Government Board and Board of Agriculture are parties to this arrangement. No tuberculosis scare there. If the royal family got no apparent harm from the milk of tuberculous cows, plain people may risk it.

One of the difficulties in dairying in a large way is securing good help. An ignorant, careless or brutal milker can spoil cows faster than the best dairy breeder in the world can make them. A man that does not know how to milk should be put at something he does know, or if he is but a learner at everything he should be assigned to tasks that he cannot spoil. A careless milker who doesn't take all the milk, or who milks roughly, can easily lose for the dairyman more than his wages every month. A brutal milker ought to be discharged as soon as the fact is discovered. He ought to be kicked out. Don't you kick him, but let the cow do it. It will be a source of pleasure to her.

At the last annual meeting of the Manitoba Dairy Association, held on the 9th day of February, 1899, the matter of market bulletins as issued during the past three seasons, was discussed at some length. The matter was then left with the executive committee to deal with as they saw fit. After going over the ground carefully, the committee have decided to secure the markets daily from Montreal and weekly from Vancouver, and have the same printed each week in the Weekly Free Press, from which source every member will be able to obtain them. A creamery or cheese factory requiring the markets more frequently can obtain the same by writing or wiring to the secretary, who will send the market out by wire at the expense of the inquirer.

The Parson points the way to heaven;
And then, with tender care,
The Doctor consummates the work,
And sends the patient there!

—Dr. John Johnson (Bolton) ..

Salt Rheum

Intense Suffering—Could Not Sleep—Cured by Hood's Sarsaparilla.

"I had salt rheum on my arms, which itched intensely and kept me from sleeping. The skin on my hands would crack open. My friends believed I was suffering from blood poisoning. I decided to take Hood's Sarsaparilla. I did not see any improvement with the first bottle but continued with the medicine and after taking five bottles I was completely cured. My hands are now as smooth as I could wish." A. D. HAGG, Elroy, Pa.

Hood's Sarsaparilla

Is the best—in fact the One True Blood Purifier. Sold by all druggists. \$1; six for \$5.

Hood's Pills are prompt, efficient and easy in effect. 25 cents.

SUPPORT HOME MANUFACTURE



CANADIAN-MADE HAND SEPARATORS

Turns easy. Open bowl. Well finished. Most durable. Price reasonable. Best investment farmers can make. Catalogue free. DAIRY SUPPLIES OF EVERY DESCRIPTION. Genuine Parchment Paper, for lb. prints, neatly and tastefully printed. By mail, post-paid. Prices reasonable. Write us. Satisfaction guaranteed.

No. 9. Canadian Ideal. Cap. 30 gals. per hour.

JOHN S. PEARCE & CO., London, Ont.

The Latest!

Patented July, 1898.

WEBBER'S HYDRO-LACTIC Cream Separator



THOROUGHLY TESTED.

THE MOST ECONOMICAL.

THE CHEAPEST.

THE BEST.

Think of it! A Cream Separator for

\$12 TO \$18

that will do the work of a \$90 machine.

Write for Circulars.

J. O. CADHAM, Portage la Prairie.

Manuf'g and Sole Agent for Man. & N.W.T.

When writing mention The Farmer.



Qu'Appelle.

One of your representatives recently had the pleasure of handling the two Shorthorn bulls brought up from Ontario by the local agricultural society. Though they are a splendid pair, the roan, Greenbank Lad, 17 months old, bred by Alex. Lee, of Greenbank, Ont., pleased him most. This is a fine blocky, low-legged fellow, well-topped and growthy. Lord Raglan, dark red and a month older, bred by Messrs. Bright & Sons, Raglan, Ont., is a little longer in the legs, about the same heart girth, and will undoubtedly be a very useful animal.

The society has taken the initiative in this scheme, and every member is entitled to bring his cow for service at a fee of 75c.; non-members must pay \$2 for the first cow and 75c. for each subsequent one. The bulls are to be located as conveniently as possible for the farmers. The two farmers who have charge of them are to get \$25 each for their feed and care, but pay the same as the rest for their services. Should the experiment prove satisfactory the society will increase the number of bulls next year, as their finances are in good shape. Their example is worthy of commendation and imitation in this as well as in some other matters.

Neepawa.

The Neepawa district is pre-eminently a grain growing one, and most of the farmers confine themselves to wheat raising to perhaps even a larger extent than in the average Manitoban community. The success which has been attendant upon their efforts along this line has been sufficiently advertised to need no further comment. Suffice it to say that this point markets more bushels of wheat than any other one point in the province. As an almost natural sequence to this condition of affairs we find that some few of the farmers still talk of the illimitable resources of the soil. But these few are in the minority, and anyone who feels the pulse of the ordinary farmer finds that he is looking forward to the day when he will keep more stock than at present, crop fewer acres and utilize more thoroughly the rough products of his farm. This movement must induce more thorough methods of farming, such as will look toward the conservation of the fertility of the soil, and also toward more permanent success. One great drawback, so far, with a good many farmers in the line of stock-raising has been the lack of pasturage. Placed on a farm of perhaps half a section containing no broken land the tendency has been very strong to break and crop the whole area. But there are a number who are trying Brome or other tame grasses, and no doubt a part of many of the farms will soon be laid down to pasturage. This, too, by restoring root fibre, will be found to be useful in preventing the shifting of the soils in the lighter sections south and east of the town. Of course, any changes which may take place must be gradual, but they are coming just the same.


There are not very many into breeding pure-bred stock of any kind as yet, but there are some few whose farm operations might be worth mentioning. Down in Wellwood, more than half way to Carberry, we called upon G. R. Black, who is quite a progressive farmer in that dis-

trict. Mr. Black keeps a splendid stable full of work horses which he need never be ashamed to show anyone. His five-year-old thoroughbred mare "Susan Ella," is heavy in foal to "Hard Lines," "Hazel Dell," a yearling filly, from same mare, and sired by "Experience," is a very pretty, even, snug little beast, which should turn out well and Mr. Black has already refused some high offers for her. The cattle on this farm are kept as they should be kept and the cows were in shape to go out to grass and make profits. His four-year-old Shorthorn bull, "Baron Baron-tonia 2nd," was sired by "Topsman," and raised by J. G. Barron, of Carberry. He is a dark red, with very fine back and considerable depth and breadth of body. Mr. Black grows about two acres of turnips and has found them a very great help in keeping stock in the best shape during winter. He feeds to the cows while butter making, and sets the milk in creamers, using the hydro-lactic system—mixing the milk with an equal amount of water before setting—and claims that the "turnip" odor is entirely absent from the cream. If this holds good where large quantities of turnips are fed, it is certainly one point for the hydro-lactic system of cream separation. Mr. Black has a fine York boar which he recently got from S. J. Thompson & Son, of Carberry, and a Tamworth sow which shows rather more width than the average and he is raising some fine young pigs of the York-Tamworth cross. He cleans his wheat and finds that chopped buckwheat, mixed with a little small wheat and barley, makes excellent hog and cow feed. Mr. Black also has had considerable success in wheat raising, getting a medal and diploma for Red Fyfe shown at the Chicago World's Fair.

P. B. Robb and Jno. R. Hamilton, both south of the town, and Jas. E. Drysdale

and Jas. B. Govenlock, both east of the town, are all farmers who are going into Shorthorns, and whose success will be watched with interest. H. Irwin, south-east of the town about a couple of miles, is a dairyman who keeps 28 cows and supplies milk to the town. A look through his herd of cows is a genuine pleasure, as we have seen hardly a herd of dairy cows in the province which is in better shape. Mr. Irwin declares that he has found it more profitable to keep only as many cows as he can keep well—and his cows are certainly well kept. Amongst the herd are some Holsteins, almost pure-bred, some Ayrshire grades, one or two Jerseys and a lot of extra nice Shorthorn grades. The Shorthorn grades have been selected with a pretty sharp eye as to their being good at the pail, and will, we think, considerably overrun an average lot of Shorthorn grade cows in milking power. He has been using a Holstein bull of Jas. Glennie's raising, from Daisy Teake's Queen, and he is a fine powerful fellow of the true dairy type and extra well boned. Mr. Irwin has grown five or six acres of corn each year and has had good success with it. This year he intends to try how he likes sowing a little broadcast and turning cows into it. He will please let us know later how he likes this plan. About 130 acres are under timothy and 20 acres under Brome grass. The timothy has done well but he likes Brome better and last year seeded five acres for seed production alone.

Away up at Orange Ridge we called upon James Glennie, the well-known Holstein breeder. Mr. Glennie commenced breeding Holsteins six years ago on his farm at Longburn and has now a herd of over 20 head—all pure bred animals. His continued successes in the milk test at Winnipeg have proven whether or not he has succeeded in his line. In starting Mr.



In Manitoba for Business.

DAVID BRADLEY MFG. CO.

Successors to Furst & Bradley M'fg Co., formerly of Chicago, Ill., but now located 54 miles south of Chicago, at Bradley, Ill., U.S.A., Manufacture the Celebrated

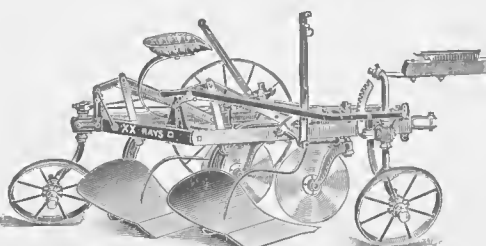
XX Rays Gang Plow

Which Penetrates anything plowable, and draws 50 to 75 lbs. lighter than other plows doing the same work.

Has a patented Stop that carries the plow bottom when at work—thus lightening the draft.

A powerful lifting spring makes raising the plow out of


It is furnished with our patent SPRING CLEVIS, which eases the strain upon team and harness whenever the plow strikes an obstruction, and which gives a more even and therefore less fretting draft to the team at all times.



the ground so easy that a 12 years old boy can easily operate it.

Fitted with our celebrated 'Garden City Clipper' bottoms they will scour in the most difficult soils.


For Prices and Terms and for particulars concerning agencies, please address our Branch House at Minneapolis, Minn.,



BRADLEY, CLARKE & CO.

ALEX. C. McRAE,

Agent at Winnipeg.



Glennie secured "Mercedes King," the stock bull which still heads the Longburn detachment of his herd, two cows and two heifers. One of the heifers was "Daisy Teake's Queen," the cow whose photo appeared in a recent issue of The Farmer, the champion milker of the Dominion. This cow, though only seven years old, has raised six calves—three bulls and three heifers. Mr. Glennie still owns the three heifers, and one of them, "Fanny Teake," took first place last year at Winnipeg in the milk test. For a few years "Daisy Teake's Queen" has been coming in in the fall, and going to Winnipeg after milking, for several months, but this year he has had her come in in April and he hopes to see her pull up pretty well on public test. She has had a beautiful large heifer calf. This cow has a record at home of 810 lbs. milk in 10 days and a record on fair grounds of 72½ lbs. milk in 24 hours, testing so as to make over three lbs. of butter. Her milk veins are simply wonderful. "Flossy Etta Teake," a two-year-old heifer, promises to be something extra, as also do several of the other heifers and young stock. Mr. Glennie finds it a good plan to have heifers come in quite young and then give them a long rest before raising the second calf. He intends some time to make a test on a Holstein steer to see what it will do in the beef line.

A good deal more of interest might be said about his herd. Mr. Glennie is making arrangements to move back to his farm at Longburn, where he will go into partnership with his son and push the Holsteins even stronger than ever.

Just south of the town we called upon J. A. McGill, to see how the Gold Standard herd of Berkshires were getting along. We found most of them running about out of doors and all in fine thrifty condition. His nine brood sows were in various conditions of flesh, according to length of time since their last litters. Three or four of them were nursing litters of good strong pigs. "Fitz Lee," the boar purchased in Ontario a little over a year ago, has turned out to be a splendid stock getter, and another boar, "General Booth," a deep hog a year and a half old, has also sired some fine litters. Mr. McGill is securing a boar from Metcalfe Bros. extensive breeders of East Elma, N.Y., which he was expecting every day. "Daisy," one of his brood sows, which farrowed a litter on January 27th, is again due to farrow on June 8th—something less than four and a half months later. She certainly is a worker! "Nora," second prize sow at Winnipeg in 1897, had a nice litter about four weeks old. "Charmer 2nd," a two-year-old sow, recently purchased from the Snell estate, is one of the finest, smoothest and best show sows we have ever seen. She won second place in Toronto last year in class under two years and is a splendidly marked animal, with good length and a wonderful pair of hams. She is very straight in the limbs, and, although fat, is very active and a good feeder. She is now in pig to "Fitz Lee." There were a little over 30 young pigs running about of various sizes, although a good many had already been shipped this spring and orders were in for a lot more. The demand this spring has been very good. A field of Brome grass near the buildings with a creek and some maple shade trees, help to keep all the stock in nice healthy condition cheaply.

A few of the farmers hereabout are building barns and going into other lines, which we may mention in a later issue.

If powdered borax is dusted over smoked hams insects and vermin will not attack them.

Think not that to-morrow's burden

Will be much too great for thee,

Rest secure upon this promise,

"As thy day thy strength shall be."

Porkers from the East.

Dr. Harrison, of the firm of Harrison & Cook, of Newdale, recently brought out three carloads of pigs from Ontario. One carload went to Newdale, one to Southern Manitoba and one to Hamilton Bros., Neepawa. One of our representatives saw the Neepawa lot, which consisted of 259 animals, weighing an average of 82½ lbs., and costing about \$4.00 apiece laid down. Messrs. Hamilton have them penned up alongside of the river east of the town and intend to feed them on damaged wheat and barley. They were indeed a very scrubby looking lot of squealers when landed, and we wondered, notwithstanding all that has been said about Manitoba being a poor place to raise winter pigs, just how long it would take to scare up such a lot in this province. A few are nice pigs, showing splendid breeding and good care, but most of them are not at all remarkable except as evincing lack of both these advantages. Some points which will be watched with interest will be the growth which can be made by such a lot of pigs when put on good feed and given a chance, and also a good deal might be learned as to the cost of producing pork, where the cost of all feed may be easily calculated. We wish the enterprising butchers success in their undertaking, and think that if they can import pigs like these and make money by feeding them, why surely any farmer can make money by raising his own pork—and perhaps somebody else's, too.

Pure Bred Stock for the West.

Under the arrangement of the Territorial government for carrying pure bred stock to suit farmers the first car from Manitoba has just been shipped out, under the auspices of the Manitoba Pure Bred Cattle Breeders' Association. The car is in charge of Wm. Sharman, Souris. The car started at Deloraine, going via Souris and Brandon. The lot numbered 15 head and are, as the following list will show, from good breeders. We trust they will make a successful trip and be the beginning of a good business, satisfactory to all parties interested.

O. H. Smith, Bear's Hill, Alta., one Shorthorn bull, from H. O. Ayearst, Middlechurch; Brown Bros., Ellisboro, Assa., one Polled Angus bull calf, from John Turner, Carroll; W. J. Salisbury, Saskatoon, Sask., one Hereford bull, from J. E. Marples, Deleau; Geo. Ness, Saskatoon, Sask., one Hereford bull calf, from J. E. Marples, Deleau; H. Ferguson, Moose Jaw, one yearling Hereford bull, from W. Sharman, Souris; R. W. B. Eustace, Moosomin, Assa., one Hereford bull calf, from W. Sharman; H. P. Lambert, Kennell, Assa., one Hereford bull, from W. Sharman; J. R. North, Fort Qu'Appelle, Assa., two Shorthorn bulls, from J. H. Kinnear, Souris; Alf. Hutchings, Edmonton, Alta., one Shorthorn bull, from John Cram, Deloraine; Robert Scott, Josephsburg, Assa., one Shorthorn bull, from Thos. Speers, Oak Lake; B. A. Vanwater, Wetaskiwin, Alta., one Polled Angus bull, from J. Traquair, Welwyn, and two Polled Angus heifers from Hon. W. Clifford, Austin; F. S. Mitchell, Edmonton, Alta., one Galloway bull, from J. P. D. Van Veen, File Hills.

The early settlers who broke up the virgin prairie may possibly not have to learn how to feed and care for the soil; but rest assured their sons will, and, if they themselves are spared to live long enough, they too will have to learn how to restore the fertility so rapidly removed by continual wheat growing.

Live Stock Lost.

Broadview, Assa.—Grey mare, 15 hands high, 7 years old, in foal. R. Robinson.

Brandon, Man.—One bay mare, three years old, little white on right hind leg, branded JP on right shoulder, left about 15th February last, was seen in Tp. 9, range 16. G. W. Johnson.

Dauphin, Man.—One dark brown mare with new leather halter on. J. McInnis, 30, 24, 18.

Glendale, Man.—One grey broncho mare, branded on left hip. Reward. S. Hughes, 15, 14, 14.

Neepawa, Man.—One 2-year-old mare, dark bay; one yearling horse, bay, had bandages on when lost. Reward, \$5. V. Slater.

Regina, Assa.—Four mare colts, two one bay 3-year-old and one mouse colored, two years old, last seen in Buck Lake district. W. Parkin.

Don't know but it's easier to travel with a trunk than to get along with the grip.

A bad road is a merciless tax gatherer, and the tax is levied on horse and feed, on harness and wagon, and on time and patience.

Brome grass has been tried at several points in the range country along the Northern Pacific in the U. S. The company is now supplying many of the farmers with seed and instructions how to grow it.



All the poetry, all the romance, all that is ideal in the wide, wide world, is bound up in that one word: "Motherhood."

A woman's greatest happiness, her greatest duty and her greatest privilege is to become the mother of a healthy, happy child. Untold thousands of women fall short of this because of weakness and disease of their womanly selves. Either they live childless lives, or for a brief spell are the mothers of puny, sickly children that bring them only pain, and leave them only sorrow.

The woman who suffers from weakness and disease of the distinctly feminine organs is certain to become an invalid. No woman can suffer in this way and be a healthy, happy, amiable wife and a competent mother. Troubles of this nature sap the strength, rack the nerves, paint lines of suffering upon the face, destroy the temper, make the once bright eyes dull and the once active brain sluggish, and transform a vivacious woman into a weak, sickly, invalid.

This is all wrong. It is all unnecessary. Dr. Pierce's Favorite Prescription is a marvelous medicine for ailing women. It acts directly on the delicate and important organs that bear the burdens of maternity and makes them strong and healthy. It allays inflammation, heals ulceration, soothes pain and tones and builds up the nerves. It banishes the discomforts of the expectant months and makes baby's coming easy and almost painless. It guarantees the little new-comer's health and an ample supply of nourishment. Thousands of women have testified to its marvelous merits. An honest dealer will not endeavor to substitute some inferior preparation for the sake of an extra little selfish profit.

"I took Dr. Pierce's Favorite Prescription previous to confinement," writes Mrs. Corda Culpepper, of Tanks, Cottle Co., Texas, "and never did so well in my life. It is only two weeks and I am able to do my work."

In most healthy families you will find Dr. Pierce's Common Sense Medical Adviser. For a paper-covered copy send 31 one-cent stamps, to cover customs and mailing only. Cloth bound 50 stamps. Address Dr. R. V. Pierce, Buffalo, N. Y.

THE NOR'-WEST FARMER

ISSUED TWICE A MONTH.
ESTABLISHED 1882.

The only Agricultural Paper printed in Canada between Lake Superior and the Pacific Coast, and issued on the 5th and 20th of each month.

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PROPRIETORS.

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WINNIPEG, MANITOBA.

SUBSCRIPTION to Canada or the U.S., \$1 a year, in advance. To Great Britain \$1.25 (5s. sterling). Agents wanted to canvass in every locality, to whom liberal commissions will be given.

ADVERTISING RATES.

Transient advertisements, for less than three months, 15c. a line (each insertion). Terms for longer periods on application.

All advertisements estimated on the Nonpareil line—12 lines to an inch. A column contains 128 lines.

Copy for changes in advertisements should be sent in not later than the 27th and 14th of the month to ensure classified location in the next issue. Copy for new advertisements should reach the office by the 30th and 17th of each month.

TO OUR SUBSCRIBERS.

It is the intention of the publishers of this paper to admit into their columns none but reliable advertisers, and we believe that all the advertisements in this paper are from such parties. If subscribers find any of them to be otherwise, we will esteem it a favour if they will advise us, and we will at any time give our personal attention to any complaints which we receive. Always mention this paper when answering advertisements, as advertisers often advertise different things in several papers.

LETTERS.

Either on business or editorial matters, should be addressed simply "THE NOR'-WEST FARMER, P. O. Box 1310, Winnipeg," and not to any individual.

Look at Your Subscription Label.

When you pay your subscription, watch the name label on the next two issues which you receive. On the first issue following payment, it might not give the correct date—the type-setting machine may make an error and the proof not be corrected before mailing day. But if the date is not correct on the SECOND issue please notify us by postal card.

Look at the date label now. Are you in arrears? Are you "paid up" to the end of 1899? The label will tell you. If in arrears, please renew promptly.

WINNIPEG, MAY 20, 1899.



CATTLE BRANDING.

We reproduce elsewhere an extract from the "Australasian," on the subject of chemical branding. It has been estimated that the branding iron is responsible for a money loss to the stockmen of the western ranges in the United States of no less than \$3,000,000 per annum. Some time ago, sides of Texas slaughter leather were quoted in the Chicago market at 21 cents per lb., if unbranded, while branded sides, even if they were in every respect equal, in grade, were quoted at only 8½ cents per lb. ! This suggests an inquiry into the relative merits of the various portions of the animal upon which to brand as well, as the possibility of discarding the clumsy, old-fashioned branding iron in favor of the chemical branding fluid or paste.

The most valuable portion of a hide is the "butt," which extends from the backbone of the animal to the belly, covering the hip and rear portions of the ribs. Its average weight is 12 lbs., and measures about 4 ft. 6 inches by 2 ft. 6 inches per side. One of the least valuable portions is the neck and shoulder, which only command about one-third of the price of the former. It is an unfortunate fact, that the vast majority of brands in the stock districts of the Northwest Territories are

used on the hips or the ribs, thus destroying the best part of an animal's hide for tanning purposes. It is claimed that a legible brand cannot be placed on the shoulder or neck by the ordinary method and there can be no doubt that this contention is well founded. If chemical branding proves a success, however, the difficulty can be overcome and this leads to the conclusion that the whole subject is one of vast importance to our stock industry.

Some attempts at compounding a fluid suitable for the purpose have already been made in Canada, but it is understood that its application involves the clipping of the hair and rubbing in of the chemical, which would be too cumbersome a process for our extensive western ranches. If the chemical is otherwise a success, it is undoubtedly a great boon to the small stock-growers in other portions of the Territories and Manitoba, who as a rule are not skilled in the use of the branding iron. It has been claimed that a fluid manufactured in Australia can be successfully applied by means of the ordinary branding iron and a shallow pan containing the chemical. If we are correctly informed, this promises to revolutionise the whole branding system in Australia and to abolish the unprofitable and inhuman hot branding iron. Experiments are now being conducted in our sister colony and the Territorial Department of Agriculture has interested itself in the matter. The Farmer will watch developments with the greatest interest.

PLOWING MATCHES.

It is only a thing of yesterday since the first regular plowing match was started in Manitoba, and so satisfactory have these matches proved that in a year or two more nearly every agricultural society may make a plowing match part of its work. Wherever such a match is held now, it proves a drawing card and by general consent it leads to the doing of good work. This new country cannot afford to waste time on fancy points. The best plowman for this country is the man who can do the best work in the least time, with the greatest ease to himself and his horses.

Just what is meant by the best work has hardly yet been settled by our best judges, and it would prevent a great deal of bickering and heart-burning if a few plain commonsense rules could be formulated before we go much further. Only the other day a pretty successful prize plowman was complaining that at the last contests he took part in, the points favored by one set of judges did not count very much with the next judges he passed under. Such jarring should be avoided, and our expert judges should try as early as possible to formulate a set of points which in their opinion are best suited for the country we live in.

In looking for pointers much light can sometimes be got from countries where plowing matches are an old established institution. Scotland has had matches for more than a century and had first-rate plowmen and good methods when most other countries were in outer darkness. But to follow present day Scotch methods here would be the height of absurdity. Last year, for example, at Dumfries, 77 crack hands entered in a competition open to all the world, six hours were allowed to plow one-fifth of an imperial acre and there were fussy little restrictions as to the kind of plows to be used. In the year 1801 the Scottish National Society held a match also in Dumfriesshire and each competitor was required to do a quarter acre in two and a half hours, or at the rate of an acre a day. One man finished his lot in an hour and twelve minutes, which, allowing for the narrow furrows put up in

plowing "lea" (grass sod, we call it here), was good time. The Scotch fancy man, or his numerous friends, is also permitted to go back and put a cranky sod in place with his hands.

This sort of thing is all stuff and nonsense, especially the time limit. In this, as in every other line of skilled work, it takes time to get into the way of doing good work. The only truly skilled workman is he who having learned, by assiduous application, how to do good work, walks away freely behind his well-trained team and leaves a clean cut straight furrow behind him, finishing in such a way that the binder can cross his last furrow as easily as possible. In another place in this issue will be found a set of rules for consideration.

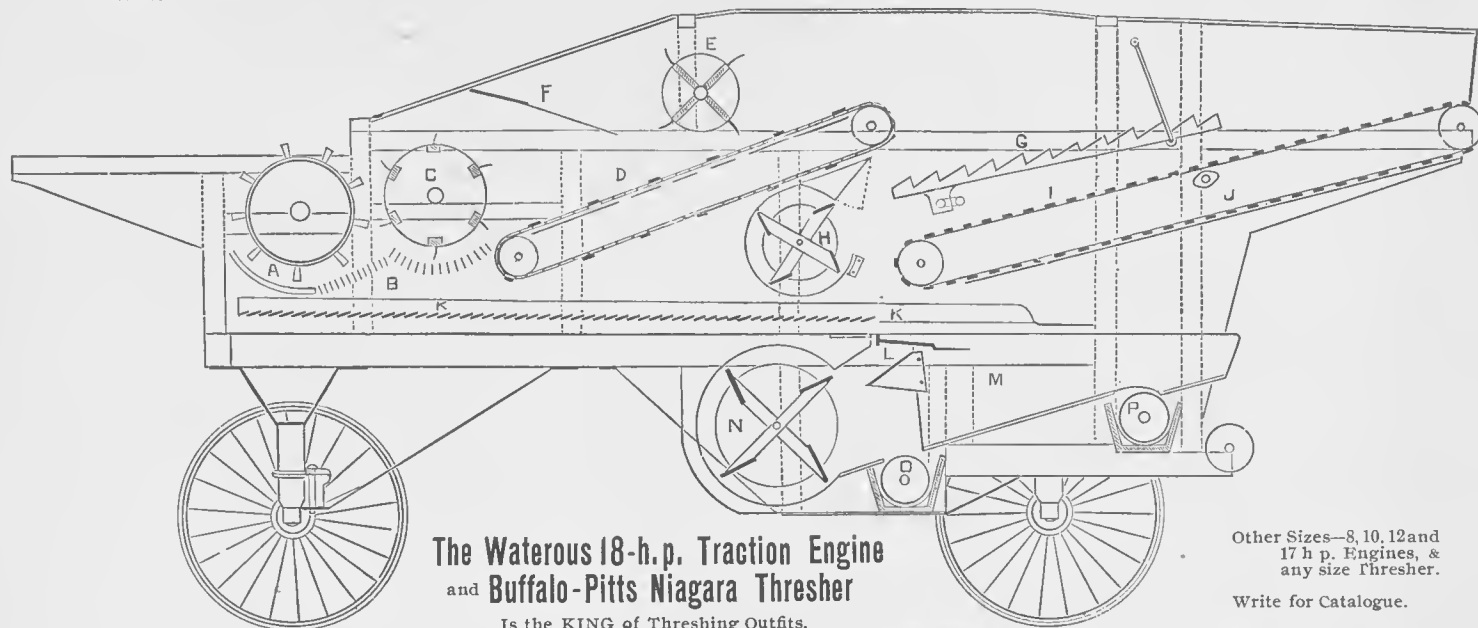
THE OUTLOOK FOR BUTTER IN MANITOBA.

The Nor'-West Farmer has on more than one occasion called attention to the precarious condition of the creamery butter business in Manitoba. The warnings given last year as to results that would follow indifference to claims of the creamery seem likely to be fulfilled this season. The government is doing all it can to foster and encourage dairying throughout the province, but the indifference shown towards the creamery, the readiness that was manifested to drop it and accept tempting offers of better prices from the storekeepers last year, and the closing of several creameries this season, all tend to discourage anyone having the best interests of dairying at heart.

The difficulties at the home end of the business are not the only difficulties we will have to contend with this season. The nearest and most satisfactory market for our butter is the mining centres of British Columbia. But the black eye Manitoba butter got in that market last year on account of the presence of mould, has prejudiced buyers against it. During the winter, while our creameries were idle, these markets have been supplied with butter from winter creameries in Ontario, and it will be therefore doubly difficult to open up trade there this season. The supplies of Manitoba butter held in storage by produce dealers and forwarded to the west, during the winter, have, we fear, not added to the good reputation of our butter. Under these circumstances every patron should endeavor to send all the cream he possibly can to the creamery and support it in every way possible; butter makers should put forth their very best efforts to make an A1 article and the directors of the creameries should see that the creamery has the best cold storage compartment that it is possible to secure. The time has come when every one interested in dairying must put their shoulder to the wheel and push hard if the progress already made is to be maintained and any advancement made. We have a few shining examples of successful creameries which show that they can be made a success here if only they are supported as they should be by the farmers surrounding them. Support, loyally given now, may save years of disappointment in the future, for creameries are bound to become an important factor in our farm economy.

The outlook for dairy butter at present is such that before the season is very far advanced we are likely to have the opportunity to say, if we want to, "I told you so." Last season we called attention to the shortsightedness of biting at the bait, thrown out by the storekeepers, of high prices. We pointed out then that the farmer was the one who was bound to suffer and already this seems to be coming true. The produce firms lost so much money on dairy butter last year that they

WATEROUS ENGINE WORKS CO. L^{d.} WINNIPEG, MAN.



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Is the KING of Threshing Outfits.

Other Sizes—8, 10, 12 and
17 h p. Engines, &
any size Thresher.

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will leave it severely alone this season, or if they buy at all, it will be at figures below its real value. But on account of its varied color and lack of uniformity generally it is not wanted anywhere. Butter at country points is now worth about 10 to 11 cents, with the prospect that it will soon be lower. Merchants are complaining, but it is the farmers that will suffer. On the whole the outlook for Manitoba butter is rather blue, in spite of the fact that the general outlook throughout Canada is fairly bright.

—Medical health officers are complaining about the amount of lumpy jaw found among cattle coming into the Montreal stock yards. The G. T. R. and C. P. R. authorities are being urged to issue instructions to their agents prohibiting the loading of animals affected with it. The health officers are also urging the Dominion Government to take some action in the matter of stamping out this plague.

—The annual report of the Dominion Experimental Farms has reached us just as we go to press. The Department are to be commended for the promptness with which the report has been gotten out. Still it is too late to be of use this spring and greater effort should be made to have it in farmers' hands soon after the opening of the new year, so that they may study it and profit by its teachings in their work for the season.

—The Toronto Industrial Exhibition board has decided to have two butter-making contests at the fair next fall. One will be open to students and ex-students of dairy schools in Canada and the U.S.; the other to makers in farm dairies. These competitions are quite popular in Great Britain and might make a worthy addition to the Winnipeg Fair. Practical illustrative lectures on dairy topics will also be given at certain hours each day.

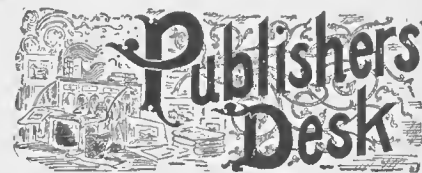
—An English company are offering to start an abattoir at Quebec and are seeking a subsidy from the government. They offer to buy all the live fat cattle offered in the province. They have settled on Quebec as the most favorable point for handling cattle. They claim that they will always be able to compete with mutton and beef from Australia and New Zealand, because that from these countries has to cross the equator and to do that

successfully has to be frozen, even then 20 per cent. of it is spoiled. Canadian produce has only to be chilled and as the trip is short to Liverpool, eight days, there is no reason why Canadian meats should not always undersell Australian and New Zealand goods.

—Reports from Ontario show that the winter wheat has been badly killed. The loss is variously estimated at from 25 up to 50 per cent. and over in some places. The damaged wheat has been plowed up and coarse grains sown. Barley and spring wheat are being used largely, also mixtures, and some corn. A few years ago the loss of so much fall wheat would have been looked upon as a calamity, but farmers are taking this quite easy. Less dependence is placed upon wheat now than in former years and more on stock, dairying, beefing and hog raising being the chief lines followed. The wheat crop is not looked upon as the all-important crop, if it fails, something else will be grown and little difference made in the annual returns of the farm. Western Canadian farmers will do well to note this.

I. P. Roberts, director of the Cornell Experiment Station and author of that excellent little work, "The Fertility of the Land," has been growing some excellent crops by thorough tillage of the soil. Last year he grew his fourth crop of potatoes in succession without any fertilizer whatever except that gained by winter cover crops of rye, wheat and crimson clover. He had from 300 to 400 bushels of potatoes to the acre. Of this soil he says: "The soil is beginning to show a deficiency of humus owing to the intensive culture which has been given and the slight returns of organic matter," and he further states that "in order to keep a soil permanently in good physical condition it is absolutely necessary that organic matter be returned in some way either by green manuring or the use of barn manures."

The point we would like Western Canadian farmers to note is that in the east humus is considered a necessary constituent of the soil. Our fertile prairies once had abundance of it, but continued cropping for 10 to 15 years has seriously reduced the content of humus, and in consequence is giving a reduced yield of grain. The crying need of thousands of acres of land on our prairies is more humus. More humus means more moisture held in the soil, and more moisture means more bushels of wheat.



This department is designed exclusively for business announcements of advertisers. Statements published herein do not necessarily voice the opinion of this journal.

Back Numbers Wanted.

We have a call for back numbers of the following dates to complete files: February, 1896; March, 1897; January, February and March, 1898. Subscribers having copies of these issues to spare will please notify the office. Ten cents a copy will be allowed for as many copies as are wanted.

The Manitoba Assurance Co. should receive the support of farmers and business men because it is a western institution, is well managed, has all its funds invested in Manitoba, pays losses promptly and equitably. The manager and directors are well known throughout the entire country.

Norval B. Hagar, the travelling agent of the Thorold cement, manufactured by the Estate of John Battle, Thorold, Ont., is in Manitoba in the interests of his firm. He will spend some three or four months in the province superintending the construction of cement concrete walls and floors. Communications addressed to him in care of The Nor-West Farmer will be promptly attended to.

We cannot too strongly recommend the use of a good Condition Powder while the spring and summer work is in progress. Horses are required to work hard and long hours during the summer, and it is essential they should get all the nourishment out of their food that it contains. Heavy feeding is almost sure to disarrange the digestive organs, and the result is the food passes through in a half digested condition, and they immediately begin to lose flesh and spirits. Keep the stomach in good working order by the judicious use of a good condition powder, and there is none that we can recommend better than Bole's, which can be had of all druggists and general dealers.—(Advt.)

Market Review.

Winnipeg, May 19th, 1899.

Seeding is progressing rapidly throughout the west, but on the lower lands of the Red River valley the acreage of wheat sown will be considerably reduced, owing to the unfavorable season. The influx of new settlers continues in a steady stream. Since last report navigation has opened on the great lakes and wheat should begin to move out of the elevators at Fort William, but it is being retarded by the strike of grain shovellers at Buffalo. Iron keeps moving up in price, and cast iron hardware prices have been advanced 10 per cent. Building operations in Winnipeg are now in full swing, but will be checked some by the carpenters' strike, unless soon settled. General business is moving quietly, so also is the implement trade, the rush for harvesting machinery not having set in as yet. The prospects are that binder twine will weaken, especially if there are prospects of a poor crop.

Wheat.

The markets still go on bobbing up a cent one day and down the next. The U.S. government crop report in the beginning of the week indicated that the loss from winter killing would be less than at first believed and this kept prices dull, but since then reports of Hessian fly in the middle western states have quickened prices and yesterday figures went up about 2 cents. At Chicago, May wheat opened 71c., closed 72½c. Duluth, 1 Northern finished at 73½c., and at Fort William No. 1 hard was only a shade below that figure.

The big lock up at Buffalo caused by the grain shovellers' strike looks worse than it did a week ago. The men had been unfairly treated by the chief contractor and now that they are masters of the situation, have grown tyrannical in their turn.

The Douglas Grain Bill, in spite of the unanimous support of the western members, has been killed in committee. Its introduction has not been quite in vain. All buyers are not sharks and every farmer is not perfectly honest, but the agitation will throw light on the situation, and if real grievances are not redressed, the fight can be renewed, and a measure less open to criticism launched at the next session of parliament.

Oats

On the street at Winnipeg are worth 38c. as feed. The demand for seed has not been as great as was expected. Seed from the east and a little from Edmonton has come in and will do good.

Cattle.

Stall fed cattle are moving out quietly to meet local demands throughout the province. Prices vary from 4c. to 5c., according to quality.

Stockers have been pretty well cleared out. Prices remain about as last reported.

Milch cows are in good demand throughout the province. At Winnipeg prices run from \$30 to \$40.

Sheep.

Prices are advancing and sheep are being brought in from outside points to meet the local demands. One car is on its way from Ontario and another from St. Paul. The sheep fattened at Emerson last winter have all been disposed of. Prices run up to 5c. live weight.

Hogs.

Few coming forward. Gordon & Ironside are reported to have shipped several cars to B.C. points. Prices, weighed off cars at Winnipeg, 4½c. for choice hogs. This means at country points not more than 4½c. live weight.

Butter and Cheese.

Creamery.—So far but very little new made butter from the creameries has been marketed. One small lot is reported sold for about 18c., but this is more than the market warrants. Ontario creamery butter can be bought for about 16½c., so that prices here would be about 17c. Some Manitoba creamery has been sent forward on consignment. Robt. Scott, of Shoal Lake, is reported to have shipped 20,000 lbs. to the Yukon.

Dairy.—Dairy butter in Manitoba is moving very slowly, with only nominal demand. The only line for which there may be said to be any demand is choice separator bricks in parchment paper, which are worth 16c. to 18c., according to quality. Dairy bricks bring 15c. to 16c. Dairy rolls and tubs are not wanted and bring from 10c. to 13c., as to quality.

Cheese.—The sale of one small lot of new cheese is reported at 8½c. Cheese factories will do well to retain their cheese until properly cured before shipping them. The market in England has advanced a little owing to stocks being pretty well cleaned up. Sales of new cheese are reported at 9½c. to 9¾c. for shipment to England. The stocks of old cheese in Manitoba are being worked off at 9½c. to 10c.

Poultry and Eggs.

Poultry are very scarce. Live chickens are worth 75c. to 80c. per pair, while dressed bring 15c. per lb. Manitoba turkeys are not to be had. Ontario birds bring 16c. a pound.

Eggs.—The market is easier and prices have declined both in Canada and England. Picklers complain that prices are too high for them. Winnipeg dealers are giving from 9½c. to 10½c., delivered.

Potatoes.

Potatoes are scarce and farmers will make their supplies go as far as they can. At country points from 50c. to 55c. is about the price. Delivered at Winnipeg they are worth about 65c. by the car lot.

Hides

The market is quiet and without any change. Inspected hides, No. 1, 6½c.; No. 2, 5½c.; No. 3, 4½c. Branded hides grade No. 2, and bulls, No. 3. Kip is worth 6c. to 6½c. Calf skins, 8c. Deacon skins, 25c. to 35c. each. Sheepskins and lamb-skins, 40c. to 65c. Horsehides, 50c. to 75c. each.

Wool.

Nominal, at 7c. to 7½c. per lb. for unwashed.

Andrew Carnegie, who has just sold his interest in the great Pittsburgh iron works for \$150,000,000, began life on the very lowest step of the social scale. His father was a poor weaver at Dunfermline, Scotland, and emigrated to the states some 40 years ago. It is worth while to know Carnegie's views on the art of making money. Here is what he said lately on that subject: "The secret of money making depends chiefly upon five things: Push, squareness, clearheadedness, economy and rigid adherence to the rule of not overworking. Too much work is worse than no work at all. In addition to these things avoid being too grasping; better make a small profit by sure means than attempt to make a larger one by uncertain and risky means."

TO CURE A COLD IN ONE DAY,
Take Laxative Bromo-Quinine Tablets. All Drug
gists refund the money if it fails to cure. 25c.

ESTABLISHED 1841.

Work Done
With**THOROLD CEMENT**Speaks for
Itself.

58 YEARS IN USE.

**CONCRETE RESIDENCE OF W. H. FRY, FENWICK, ONT.**

Built with Thorold Cement in 1877.

Size of building, 28 x 32, 18 feet high.

ESTATE OF JOHN BATTLE, THOROLD, ONT.

Dear Sirs,—I built in the year 1877 (22 years ago) my residence, which is a concrete one, out of your Thorold Hydraulic Cement, and it gives me pleasure to state that, after nearly a quarter of a century, the building is still in first-class condition. I have often wondered why, when building houses, people do not go more into the use of concrete, as I consider a building made of this material is very much cheaper and more durable than one of brick, stone or wood.

I have much pleasure, therefore, in recommending your Thorold Cement to any person having in view the erection of residential or farm buildings.

Yours truly, W. H. FRY.

P.S.—Permit me to add that I prefer it to brick, as the nature of it is cool in summer and warm in winter, and when built with a smooth finish is much more attractive than brick. I intend to build another house of the same material.—W.H.F.

NORVAL B. HAGAR, our travelling representative, is now in the Province of Manitoba, and will be pleased to hear from anyone intending to build. Letters addressed to Norval B. Hagar, c.o. The Nor'-West Farmer, Winnipeg, Man., will reach him.

Estate of John Battle, Thorold, Ontario.

FENWICK, ONT., Jan. 16, 1899.



While our columns are always open for the discussion of any relevant subject, we do not necessarily indorse the opinions of all contributors. Correspondents will kindly write on one side of the sheet only and in every case give the name—not necessarily for publication, but as a guarantee of good faith. All correspondence will be subject to revision.

Concrete Walls.

New Subscriber, Holmfild, Man.: "1. Will you kindly give a rule for making concrete with lime and sand? 2. Is it suitable for building stable walls, where a part of the wall is under ground? 3. Will such a wall support a barn on top without studding or posts in the wall to strengthen it?"

Answered by Norval B. Hagar, Allanburg, Ont.:—

1. I have handled concrete for years and would advise no one to use lime in building concrete walls, always cement, for where lime is used where water and frost gets to it it will never give satisfaction.

2. Yes, cement concrete is suitable for building stable walls where part of the wall is under ground. I have built barn walls in nearly every county in Ontario and never had a farmer object to them who had used them, both for floors and walls.

3. A wall a foot thick will support any barn I have seen. I may refer to a wall I built last year at Grimsby, Ont., for J. W. Van Dyke; the walls were 45x160x24 feet high, with gables 12 feet high. The first story was 1 ft. thick, second story, 10 in. thick, gables 8 in. thick. There is not a post in the first story to hold the second; it is held up by trusses and the first story walls of 1 ft. in thickness retain the weight of the second story and roof, which is an iron one.

Registration of Clydesdales.

P. Q. R. Stone, Hilton, Man.: "Having been a subscriber for The Nor'-West Farmer for some years, I write to ask if you can give me some information in your next issue re the following. I have a Clydesdale mare, which I bought last spring and I have pedigree for her, with a certificate of registration from the American Clydesdale Association. She is registered as Lillie Victoria, No. 7751, Vol. VIII of the American Clydesdale Stud Book; was bred by H. A. Halverston, Norway Lake, Minnesota, and owned by N. P. Clarke, St. Cloud, Minn. The color and markings mentioned in the pedigree correspond with those of the mare; but can you tell me how to find out if the pedigree is genuine, and if she is eligible for registration in the Canadian Stud Book? She has raised a foal this spring, and I would like to register her if I can. If you can let me know how to proceed in the next issue of your valuable paper you will greatly oblige me."

Answer.—The registration of the mare's pedigree is a proof that it is genuine, as the breeder has to sign a declaration to that effect when offering it for registration. Whether the mare you have is the one to which the pedigree applies is another question and can only be decided by evidence obtained from all the parties who have owned her since she left the breeder's hands. A certificate should be obtained from each one of these as to the facts of the sale to the succeeding owner. In this way the identity of the mare is followed up until she reaches your hands. The fact that you hold a certificate of registration in the American Clydesdale Stud Book also

proves that your mare is eligible for registration in the Canadian Clydesdale Stud Book, as the qualifications are the same i. e., tracing to stock registered in the Clydesdale Stud Book of Great Britain. Possibly you may have to register all the ancestors until you come to imported stock. Write to Henry Wade, Parliament Buildings, Toronto, Ont., the secretary of the Canadian record, stating pedigree and number in the American record, and he will tell you what you will have to do.

Brome Grass on Breaking.

A New Subscriber, Gladstone, Man.: "1. Will Brome grass thrive and give pasture next year if I sow it on fresh breaking this year, or would I have to break and backset and not sow until next spring? I have a pig pasture fenced, but the prairie grass is pretty well run out. 2. I want to sow some Brome on stubble land, spring plowed. I see in last issue you recommend sowing oats or barley as a nurse crop. How would you set a Massey-Harris shoe drill to make it sow, say half-bushel oats and 12 lbs. Brome grass per acre?"

Answer.—We believe that Brome grass would not do on breaking in one case out of ten. All experience goes to show that the prairie sod must be rotted by means of breaking and backsetting before any new crop will do much good. Where rooty plants with slender stems, such as wild roses, have partially opened up the

soil and let in the air, a first year's crop may be taken in an emergency.

2. Brome will do well on spring plowed stubble, and whether you use a few oats as a nurse crop or not is not of any consequence. We have repeatedly pointed out that any ordinary seeder will fail to distribute Brome grass seed properly. Mr. Bedford uses a special machine and if you cannot sow the seed by hand you must find some one that can. Some coarse sand and salt mixed with the seed will help to break it up and make it easier sown.

Cost of Binding Volumes of The Nor'-West Farmer.

A. W. Broadview: "Kindly inform me what the cost will be to have my last year's Farmers bound, and where."

Answer.—From \$1.00 to \$2.00, according to quality of binding. Send them to this office and state price you wish to pay and we will give you value for the amount.

Legal Questions.

The Farmer is in receipt of legal questions from the following:—"Otonoby," Arden; "Subscriber," Springfield; "D. T.," Boissevain; "F. J.," Northern, Alta.; and "L.," Ninette. As we have no Legal Department, we cannot give answers to the questions submitted.

SEPARATOR BUTTER

Do you make sweet Butter, and are you getting satisfactory prices for it? or are you playing a losing game? Do you envy your neighbors' success? If so, ship your next lot to us, and keep it coming regularly.

We are also open for FRESH EGGS, VEAL, POULTRY at Current Values.

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Branches: VANCOUVER, NELSON, DAWSON CITY.



A house is as good as it looks—to the buyer. Need of paint or poor painting will cheapen any house. Keep your buildings properly painted and you'll keep them new. Paint an old building properly and you'll make it years newer both in your eyes and those of a prospective buyer. Painting properly includes much. First of all—proper paint.

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are composed of the materials that best withstand the action of all weathers—that best preserve the surface they cover. Ready to use, but not patent paints. Ground and mixed by special machinery with a nicety not possible by any other means. If you're going to paint or hire a painter, write for *Paint Points* and it will be mailed to you free.

THE SHERWIN-WILLIAMS CO. PAINT AND COLOR MAKERS,
Canadian Dept., 21 St. Antoine St., Montreal.

A Blind Teat.

J. D., Hillesden, Assa.: "One of my cows went blind on fore quarter of bag a couple of weeks ago, with no apparent injury to teat. It seems as though there is a lump of wind inside half the size of an egg. Can force it almost to point of teat, when it will slip back. Only about a tablespoonful of water will come from teat. Can I do anything for her?"

Answer.—Try to force the swelling through the opening of the teat, the pressure used may rupture the wall of the cyst and allow the scape of the fluid inside and the passage will be open for the milk to run out. If you are unable to do this, there is no remedy for it except an operation which should only be attempted by a professional man.—Veterinary Editor.

A Pernickety Stallion.

S. W., Qu'Appelle, Assa. "Would you kindly inform me through The Farmer the cause of a stallion refusing some mares, showing a disposition to fight them. Has the feed of said mares anything to do with it? Would over-feeding them with oats be the cause, or do you know of any remedy?"

Answer.—It is probable that the mares in question have some odor which is offensive to the stallion. You might try the effect of applying a little of the oil of rhodium to them before trying them again. Pour a very little on a rag and rub it over the mare's back, withers and quarters. Most stallions are very fond of this odor. It is not likely that the feed of the mares has anything to do with it. —Veterinary Editor.

Manitoba Bred Shorthorns at Winnipeg

Reader, Hayfield: "Is there to be a Manitoba bred class of Shorthorns at the Winnipeg Industrial this summer?"

Answer.—There will be about \$100 given this year for Manitoba bred Shorthorns, beside a gold medal. These prizes are open to the Territories as well. In addition there is the chance to compete in the open class as well, for nearly 50 prizes, all of them good money, running from seven prizes at \$40, down to the 4th, prizes. No such chances have ever before been offered to progressive Shorthorn men.

Black Leg in Winter—Vaccine Treatment.

T. G. Pearce, Agricola, Alta., writes: "In a recent issue of your paper I saw a statement made that black leg amongst cattle did not occur in the winter, and I was of the same opinion, but from the following case I was led to change my opinion. On March 20th last a yearling steer of mine in good condition suddenly became sick; his neck and under jaw swelled very rapidly, and in about ten hours he died. Not suspecting black leg, and being puzzled by the symptoms, I sent for Veterinary Surgeon Sweetapple, of the N.W.M.P., and on investigation he pronounced the animal to be infected with black leg. Of course, I burned the carcass at once. Having seen in your columns an advertisement recommending the Pasteur system of vaccination, I applied to the advertiser and obtained from him a vaccinating outfit and a supply of vaccine. I then proceeded to vaccinate the remainder of my young stock, and since then have had no more losses, although the cattle vaccinated are exposed to exactly the same conditions as the steer that died."

Bees Doing Well.

A. Maynard, Dauphin, Man., writes:—"This is my fifth annual report of how my bees have wintered in Dauphin. I removed my colonies to their winter quarters on October 31st. I examined every hive

some time before this to see if there was plenty of honey in each one and a good queen. If I find any of the colonies short of bees I unite them with another weak colony, as I find that it does not pay to try to winter weak colonies. Neither does it pay to leave them short of honey. An allowance of 30 lbs. of honey will winter a strong colony, but to be sure that I have enough, I leave them 35 lbs. This will carry them through a late spring, and I find it has answered very well this spring.

"I removed my bees this spring from their winter quarters on April 17th, and all came out strong and healthy. I examined them all to see if each colony had a queen and at the same time cleaned out all dead bees. On April 20th they were carrying in pollen. So far, I have found the Manitoba climate a very suitable one in which to winter bees. My honey yield last year made an average of 65 lbs. per colony."

Removing Turnip Odor from Milk.

Enquirer writes: "I have heard it said that by setting milk mixed with an equal amount of water the odor of turnips may be so thoroughly eliminated as not to appear in the butter. Is this a fact? Have any of your readers ever tried the plan with this result? Do these odors show up in cream separated by the ordinary centrifugal separator system?"

Answer.—If Enquirer owns a cow and has turnips enough on his farm to give her a feed of them, he might perhaps settle this question for himself. Meantime, it is our opinion that dilution by means of water will not eliminate any foreign flavor once it has got into the milk. It will make little difference whether the flavor is in the cream or the milk. It has been alleged that the separator will take such flavors out of cream, but we take that with a "grain of salt." The truth is that the separator will not take the odor out. If the next time you have any turnips to feed to a cow you feed them just after she has been milked, it may answer a good deal better than the plan you suggest.

Winter Planting of Trees.

Korn Kobb, Tontonka, Man.: "How would spruce trees do to be taken up in the winter if the roots were kept frozen until they could be planted in the spring. Spruce trees, which we could get easily in the winter would take too much time in the busy season to get. Perhaps you or some of your subscribers could give me some information on the above."

Answer.—If the trees could be taken up with a good big ball during the winter, and carried to their destination loaded on a bed of finely rotted manure from an old dungheap, then set where a covering of the same material could be tramped round it, then it might be feasible to try them in new holes, before the frost is out of the balls. The new holes would have to be large enough to allow some fine earth to be worked in all round, and soaked with water to settle the earth and keep out the air. If air gets to the roots of any tree it means ruin. And to plant trees among little chunks of frozen earth is for that reason downright folly.

It is not possible to say whether such an experiment would be successful, but we think not. To be so it would have to be done with great care. A much more feasible experiment would be to go to the bush after seeding is done, take up properly selected trees with a good big turf, set them on top of an inch or two of old rotted manure, well wet in the wagon and plant in holes where there is fine mould well soaked in water, into which the roots would sink so as to leave no air. To let the roots dry even very slightly is fatal to spruces. Perhaps some of our numerous readers can tell of a better plan.

\$5 REWARD.

Will be paid for any information that will lead to the recovery of BAY MARE, three years old, little white on right hind leg, branded JP on right shoulder; had on leather halter April 15th, 1899. The "JP" resembles the letter S, as they are joined.

G. W. JOHNSON, Box 344, Brandon.

Some cough mixtures smother the cough. But the next breeze fans it into life again.

Better put the cough out. That is, better go deeper and smother the fires of inflammation. Troches cannot do this. Neither can plain cod-liver oil.

But Scott's Emulsion can. The glycerine soothes and makes comfortable; the hypophosphites give power and stability to the nerves; and the oil feeds and strengthens the weakened tissues.

50c. and \$1.00, all druggists.
SCOTT & BOWNE, Chemists, Toronto.

CALIFORNIA IRRIGATED FRUIT LANDS FOR SALE IN SMALL TRACTS.

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If you want to buy a 10 or 20-acre tract of No. 1 Fruit, Vegetable or Alfalfa Hay land, we can furnish it to you on terms to suit you. This is your chance to take out an insurance policy against lock-outs, financial depressions, ill-health and want. It is within the reach of all. Those desiring to go to California, the land of sunshine and flowers, health and happiness, will do well to consult us before going. Write for Catalogue.

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High-carbon Colled Spring Wire
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Best Combination
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We are prepared to prove it. Send for circulars and samples.

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425 MAIN STREET, - , WINNIPEG.
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Buff Cochins.

Eggs at \$2 per 13 from my Prize-breeding Pen. These birds have never been beaten. Also a few choice Cockerels for sale cheap.

F. D. BLAKELY,

2304

285 Ellen St., Winnipeg

Curing Fish.

A Subscriber, Holmfild, Man.: "I notice in the May 5th issue a subscriber asks for a recipe for curing fish. I therefore send you my recipe for saving 'suckers,' which will probably do equally as well for pike or jackfish. Split the fish on the back, leaving the scales on; wash them thoroughly; then salt moderately in dry salt. Leave them for a few days, after which take them up and rinse off in clean water. Now re-salt in a tight barrel with dry salt. In a few days the brine will rise as clear as water and cover the fish. This is reliable and superior to pickling, smoking, etc."

Cultivation Points.

Wm. Kitson, Burnside, Man.: "In answer to Mr. Cotton's letter re cultivation of new land, I refuse at the present time to go further than to refer to the question of how new land should be handled."

I would ask Mr. Cotton, does he know, has he ever noticed that the soil under the breaking decomposes a certain depth, say about three quarters of an inch, depending on the season, the thickness or thinness of the breaking, how the sod is turned, and the length of time it is allowed to stay as breaking? At any rate, such are the facts, and this decomposed soil should always determine the depth backsetting should be done. If not, why not?

Below this the soil is not "cooked," is not decomposed, and is of very little, if any, use for plant food until it is. Neither does it hasten the process by bringing it to the surface by deep ploughing, but rather retards it. Instance the breaking itself. Leave this soil where it should be, bringing up a small portion next ploughing, and so continue until you get your depth. Mr. Cotton will now see how deep I would and always have backset.

Now as to this harrowing "seven" or even "twelve times." Well! If it had to be done, I certainly would not know who to pity the most, the one who broke and backset or the owner of the farm—but let that go. Let us suppose breaking and backsetting has been properly done. I would harrow just as little as I could to leave the surface fairly level, but no more, even supposing it is quite soddy. Then roll.

The reasons are about thus: So long as sods remain in the soil we are reasonably sure of a good crop. It keeps moisture better, a few days' earlier harvest, is less liable to be so much injured by frost, more bushels per acre, and what is of considerable importance, a better grade of wheat. Looking at these facts separately they are well known. Now use a little common sense by placing them all together and then tell us whether they are worth preserving or no. I take it they are."

Tanning Hides.

The Farmer has been asked to give a method of tanning hides. Here is one that has been found to work well. It is taken from the National Stockman and Farmer: "Stretch the pelt firmly on a smooth table or bench and fasten firmly with small tacks, then scrape all grease and flesh from the pelt. This is easier done when pelt is fresh and best results will be obtained then. Now to every 20 quarts of water add four pounds of salt and one pound of dissolved alum. Let pelt remain in this solution 12 hours or until hair is fast. Now wring out and rinse thoroughly. Then put in a tub of soft water to which has been added one pound of sal-soda, half-pound borax and one ounce aqua ammonia, and enough scap to form a good suds. After washing well scrape flesh side again and you can then remove all glue and grease. Now to every 10 gallons of soft water add half

a bushel of wheat bran and seven pounds of salt. Then let this stand in a warm place until it ferments, strain out the bran and add two and one-half pounds of sulphuric acid, add slowly and stir all the time. Put in the pelt and stir often and keep pelt under the liquor from one to five days, according to thickness of pelt. When it is white and feels like wet leather it is tanned. Now stretch in a cool, airy place to dry, never place in the sun to dry, as that will make it hard. When dry sand-paper until smooth then whip and pound the fur side until soft and smooth, and now they are ready to be lined. If it is to be a robe line, with felt with pinked edges. Horse hide makes fine robes. To color fur never let the dye touch the skin, as it will harden—just let into the dye far enough to color fur.

The following will answer well for sheep skins: Take two long woolled skins, make a strong suds, using hot water. When it is cold wash the skins in it, carefully squeezing them between the hands to get the dirt out of the wool, then wash the soap out with clean cold water. Now dissolve alum and salt, of each half a pound, with a little hot water which put into a tub of cold water sufficient to cover the skins, and let them soak in it over night, or 12 hours, then hang over a pole to drain. When they are well drained spread or stretch carefully on a board to dry. They need not be tacked if you will draw them out several times with the hand while drying. When yet a little damp have one ounce each of saltpeter and alum pulverised and sprinkle on the flesh sides of each skin, rubbing in well, then lay the flesh sides together and hang in the shade for two or three days, turning the under skin uppermost every day until perfectly dry. Then scrape the flesh side with a blunt knife to remove any remaining scraps of flesh. Trim off projecting points and rub the flesh side with pumice or rotten stone and with the hands. They will be very white and pliable, suitable for a foot mat, also nice in a sleigh or wagon on a cold day.

That Five Per Cent. Shrinkage.

Broadlands, Ninette, Man.: "The following newspaper clipping has come to my hand, referring to the hog industry in Manitoba: 'The supply of hogs has not been equal to the demand. Large importations of hog products have been made to supply the markets at our doors, markets that should have been supplied by the farmers of Manitoba.' There is a reason for all things, and the reason for the shortness of hogs in Manitoba is that the packers will not pay a price to farmers that leaves them a profit. There is only one year in three when there is enough rough stuff, cleanings, etc., to feed pigs, and between those years the farmer lets his breeding stock go because it does not pay to keep on breeding at the prices offered. The price now is only 4½c. and 5 per cent. off for shrinkage. Would not a butcher be laughed at if he allowed purchasers of his bacon a shrinkage because the meat shrinks while frying? Ought we not to be laughed at for giving nearly enough in shrinkage to cover the total loss in killing? The butchers practically get farmers to stand the shrinkage and all they lose is the cost of killing. Here is a sample of how a pig is killed here. Pig caught, stuck and weighed; scalded, scraped, dressed and weighed again. The total loss (not counting blood) was 6 per cent. I would say that the average would not exceed 7 per cent., and yet we have to stand 5 per cent. of that amount. A man would be laughed at in an old country market if he talked shrinkage. He can buy by weight if he likes, but mostly by eye.

"Then, there is another fault which is like the farmer's butter question. The same price is paid for lard as for bacon hogs, the same for scrubs as for well-bred

pigs. When will the packers learn to discriminate, as they do in the east, and pay a premium on the hog they want?"

"There are a lot of hogs sold at a loss, and when a farmer can get one cent more per pound for dressed than live hogs, it pays him to dress them. The packers say, 'Don't do this, and will dock you so much for shoulder stick, so much for gullet left in, so much for this, that and the other thing, all to keep us from dressing and getting the profit they otherwise would make. I say drop off that 5 per cent. shrinkage.'"

Note. — What our correspondent says about letting the pigs go between the years when rough feed is plentiful is the cause of a great deal of the uncertainty and unprofitableness of hog raising. Enough coarse feed should be grown to feed off a certain number of hogs every year. Definite plans should be made for providing the necessary feed and not leave to chance so important a matter. Properly handled they can be made a source of profit on every farm. In regard to the price, Manitoba hogs have been bringing three-fifths of a cent a pound more all winter than Ontario farmers have been getting.

The 5 per cent. shrinkage, as we understand it, is to bring the weight down to "fasted weight." We have heard, but perhaps the statement is false and slanderous, that feed at half a cent and water at nothing a gallon can be skilfully administered so as to swell considerably the live weight of any pig. Packers rightly refuse to pay for this.

The deductions in regard to the shrinkage which occur in killing hog are astray. The blood should have been counted. In fact, the animal should have been weighed alive at the beginning of the test; the loss then would have been 20 per cent. or over, probably 25 per cent. When Manitoba raises so many hogs that the buyers can pick and choose, we may expect discrimination in regard to the quality of the hogs offering. At present they are only too glad to get anything that comes along and some of the hogs offering are rather poor, we will admit that, but they also bring a poorer price, for there is a certain amount of discrimination even now.

PEEL'S Horse & Cattle Food

THE GREAT BLOOD PURIFIER?

Will do your stock more good than any condition food on earth. Hundreds say so. If your dealer does not keep it, write

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IF YOU NEED A WATCH

Buy our Waltham movement in a Nickel case for \$5.00. We guarantee a good timekeeper and the best watch ever offered for the money.

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420 MAIN ST., MCINTYRE BLK., WINNIPEG.

Drop us a postcard for a wooden mailing box, FREE. Please mention this paper.

COLD STORAGE BUILDERS.

For Creameries, Dairymen and Butchers. References—C. C. McDonald, Dairy Inspector, and Ald. T. Cowan, Winnipeg. Prices given on application.

G. T. LAIRD, 214 James St., Winnipeg.

When writing mention The Farmer.



The Plow and Plowing.

By Robert Wemyss, Reaburn, Man.

I venture to address you upon the above subjects in the hope that however crude my remarks may appear to skilled agriculturists they may evoke from others opinions which in their results may lead to the ideal cultivator. It seems to me there is much to be desired yet, not only in the character and form of the implement on which the most important results to farmers depend, but also in the manner in which the soil is turned up to give those results in its cultivation.

The plow is the most ancient of all agricultural implements, and was in existence and use prior to the time of Job. It is frequently referred to in the Old and New Testaments. At first of the most primitive kind, it has developed from the crude form shaped from the double branch of a tree, the upper half being the beam to attach oxen, while the lower, shortened and sharpened, served to turn over the soil, to the implements which we now see in use upon the farms. The early East Indian plow was a thick stick or small log so shaped that the handle stood at an angle which allowed the plow to easily grasp it, and at the same time to press the pointed portion into the soil. In the 11th century the frame work was mounted on two wheels and was drawn by four oxen, requiring two men, one to drive, and the other to guide the plow. The early French plow was attached to a kind of truck, somewhat similar to the front half of our wagons, the beam raised and fastened thereon. It was not until the 18th century that much attention in Britain was directed to the improvement of plows, and the improvements seem to have been copied from the Dutch, who, even then, were much in advance of other nations in agricultural matters. Since 1803, when the discovery was made of case-hardening or chilling plow-shares, an impetus was given to improvements, and during this 19th century they have steadily progressed until now in Britain, Canada, and the United States the finest plows in the world are to be found. But the question is are they the best that are fitted for the scientific development and cultivation of the soil?

During the latter part of this century agricultural science has done much to forward and improve the farmer's knowledge of the requirements of agriculture, and only those who apply the discoveries of that science can now hope for the best results from the farm. Scientists tell us that it is not so much the soil itself, but the properties in the soil which supply the food for the plants, and this food is released and brought into active use by the careful preparation and cultivation of the land. Roberts, in his book, "The Fertility of the Land," says, "The principal causes of low yields of farm products are to be found in the imperfect preparation of the land, poor tillage, and hence a lack of available plant food, and insufficient moisture during some portion of the plant's life." Some soils naturally contain more plant food than others, but those can be supplied, or reinforced when exhausted, either by attracting from nature, or by such invigoration as common or artificial manures afford. The great ends which must be sought in the preparation of the land are its thorough disintegration or pulverization, so that the plant food may be released or absorbed, aeration,

for roots of plants require air, and sufficient drainage, so that the plants have moisture but not little lakes round their roots. Light lands respond more quickly to cultivation than those of a heavier nature, but all soils under proper cultivation may be made to do so. Since pulverization is one of the most important ends to be achieved, the great essential in plowing, the question arises, Has the implement best adapted for this been obtained? We have seen the gradual evolution of the plow from its most primitive form to the beautiful implements of Canadian and United States workmanship, and still there is something yet to be desired. The present plow in turning over the furrow slice leaves the furrow smooth and partially puddled, and that at a depth of from four to eight inches, and where heavy rains supervene, makes the land more retentive of water than is desirable, especially at those depths, and at the same time prevents the air circulating through the soil. In dealing with stubble land it seems reasonable to think that a cultivator or plow, having 4 to 6 teeth, so placed as to cover a surface of say 14 to 16 inches in width, would be a more efficient implement for turning up and pulverizing the soil than those now in use, and the teeth (made of steel) would be more destructive of weeds. The teeth should be sold, bevelled from the centre on both sides, front and back, tapering as those of the cultivator do now. The soil would be in a manner torn up, and thrown on both sides of the teeth; it would be more pulverized than if turned over in a solid slice, and it would be at once ready for the harrows, which, with less labor than when lying in the slice, would prepare it for the seed drill. Possibly the draft might be greater than the ordinary plow, but the object to be attained is the thorough preparation and the very best condition of the soil, as the seed bed, and while the draft may not be more, yet heavier horses, or using three in place of two, would remove that objection, while the better results would more than compensate for the extra power. The preparation of the fields should be as nearly as possible that followed in gardening, and the old practice of sowing the land as plowed before the harrows are used to break and pulverize the plow slices must result in loss of seed, which is covered too deeply, or at least in irregular germination, and this more especially where the soil is of a heavy and tenacious nature.

The Weed — "What shall I do to be saved?" Move on to an all-wheat farm.

Big Oat Fields.

The Toronto Weekly Sun asks the following question:—

Can anyone beat the record made by R. C. Brandon of 104 bushels of oats to the acre? The largest yield at any of the Dominion Experimental Farms last year was a little under 89½ bushels.

The Nor'-West Farmer is pleased to say that Manitoba can beat this easily, and the Sun can tell its readers that Manitoba is the place to grow oats as well as wheat. We would like to correct the Sun about "the largest yield at any of the Dominion Experimental Farms." At the Brandon Experimental Farm last year, 1898, no less than ten varieties of oats yielded over 104 bushels to the acre; one variety gave that amount and another almost reached the mark. These were trial plots, and if not satisfactory a field test may be cited where quite a number of acres of Banner oats average 116 bushels per acre on the same farm. The west can do it.

E. C. Pell is sowing 100 acres of flax on his farm northeast of Carman.

Alex. Taylor, who left Carberry a year ago to take a look through New Zealand, has lately returned. He found it a beautiful country, with a fine climate, but with fewer chances for a man of small means than are offered by Manitoba.

We cannot do better service to our readers who are pushed for time than by repeating the advice given two years ago by Walter Brydon, Neepawa. He says, "hitch up your odd horse to one section of your harrows, tie it alongside of your off horse when plowing. He will go three times over every furrow you plow, so helping to compact the land as a seed bed and putting it in the very best possible condition for the seeder.

A farmer at Neepawa has patented an invention for removing dust from the machine while threshing. It consists of the ordinary carriers, as attached to most threshers, but beneath is a powerful fan, operated by steam, which drives a strong current of air upward through a chute to the end of the carrier, where it catches the straw and blows it in any desired direction. Half way up the carrier there is a shallow trough, into which the chaff will drop on it progress upward. A current supplied by the same fan blows the chaff out at the side of the carrier, thus saving the whole of it for feeding.

INDIAN CORN.

Yield per Acre at the several Experimental Farms for the Season of 1898 :

NAME OF VARIETY.	O. tawa, ONTARIO.	Nappan, NOVA S.	Brandon, MANITOBA.	Indian H'd N.W.T.	Agassiz, BRITISH C.	Average of All Farms
	PER ACRE. Tons. Lbs.	PER ACRE. Tons. Lbs.	PER ACRE. Tons. Lbs.	PER ACRE. Tons. Lbs.	PER ACRE. Tons. Lbs.	PER ACRE. Tons. Lbs.
RED COB ENSILAGE.	24 1170	18 300	27 1440	14 1964	33	23 1375
Early Mastodon	24 1,060	21 1,450	27 120	8 764	29 1,400	22 558
Cloud's Early Yellow	24 473	12 1,850	27 1,000	12 420	26 1,460	20 1,440
GIANT P. ENSILAGE.	22 1100	16 1550	25 380	15 492	38 450	23 1194
Early Butler	21 1,340	12 970	24 1,340	12 552	28 100	19 1,780
Evergreen Sugar	21 900	11 550	14 160	6 540	16 1,000	13 1,830
Rural Thoro. W. Flint	20 1,800	23 1,850	29 1,840	18 620	23 200	23 462
Champion W. Pearl	20 247	18 1,220	21 1,560	16 1,264	28 1,760	20 1,610
Sanford	20 113	20 1,800	23 200	13 1,720	22 1,100	20 186
SELECTED LEAMING.	19 1380	14 1150	19 1160	13 796	22 220	17 1741
Pride of the North	19 940	15 1,350	24 1,500	9 742	29 80	19 1,322
White Cap Yellow Dent	19 170	17 1,200	28 1,200	12 1,740	25 160	20 1,294
Extra E. Huron Dent	18 1,180	15 1,020	23 200	11 572	25 1,920	18 1,778
Mammoth Cuban	18 80	16 1,770	20 1,800	9 216	20 1,800	17 333
King of the Earliest	17 1,200	17 100	19 940	10 1,780	24 1,610	17 1,926
Mam. Eight Rowed Flint	16 1,440	16 1,770	24 840	11 968	24 1,000	18 1,603
North Dakota White	15 1,240	16 1,770	22 1,100	8 286	22 1,320	17 333
Longfellow	14 1,920	17 650	23 1,080	10 1,384	19 1,600	17 526
Pearce's Prolific	14 1,113	17 1,200	25 600	9 1,800	24 1,000	18 742
Angel of Midnight	14 1,060	16 450	24 1,720	11 1,232	21 900	17 1,472
Compton's Early	13 180	16 1,550	25 1,700	14 1,568	24 1,500	19 99

The above varieties in large type speak for themselves. They are handled by E. R. Ulrich & Sons, Springfield, Illinois, U.S.A. Ask your dealer for **ULRICH'S SEEDS** when buying.

Rules For Plowing Matches.

The Farmer suggests the following rules and regulations for governing plowing matches. They are compiled from the rules followed by the Agricultural and Arts Association, and those used by plowmen in Ontario County, in Ontario. They are offered for criticism, with the hope that plowmen will point out wherein they can be improved and made more suitable to western conditions.

The premiums will be divided into three classes:—

- 1st. Open to all plowmen.
- 2nd. To those who have never taken a first prize in any plowing match.
- 3rd. Boys under 18 years of age.

1. All entries to be made personally, or if by letter, on or before 8 o'clock a.m. on the day of the match.

2. Competitors to be on the ground at 9 a.m., and the plowing to commence at 10 a.m., and to be completed at 4 p.m.

3. Each plowman shall draw his number, and the lot having the corresponding number shall be the lot on which he shall plow.

4. After drawing his number the plowman shall proceed to stake off his land, and shall be allowed one assistant to set and remove his stakes. Any plowman receiving further assistance shall forfeit his claim to any prize.

5. On proceeding to open his land each plowman shall commence at the stake corresponding with his own number, and shall back up his own furrow.

6. All plowing to be six inches deep and the width to correspond to the width of the plow used; a less average depth than six inches shall not be entitled to a prize, and not more than one inch undercut will be allowed. Feering in stubble must be split out not less than three inches deep.

7. Plowmen shall commence by a signal from the time-keeper, and shall complete their work by 4 o'clock, p.m., and should there be a difference in the quantity of land a further proportionate time shall be allowed.

8. Each plowman, after finishing, must place his stake with the number on the centre of the land, and remove his team and plow from the land immediately, and report himself to the time-keeper.

9. Should one or more competitors be considered of equal merit, the preference shall be in favor of those finishing in the shortest time.

10. The decision of the judges shall, in all cases, be final, if in accordance with the above regulations. No person will be allowed to interfere with the judges or directors while at their work.

11. All the land plowed will be judged.

12. No person will be allowed to interfere with the plowmen while at work.

13. A copy of these regulations will be put into the hands of the judges, and will be strictly adhered to.

The Pasture Problem.

A farmer was in the office the other day for a short time, and, among other things, he said that he was doing less this year in dairying than in previous years. The reason he gave for this was that pasture was getting scarce owing to the land being taken up all around him. Pasture could be had, but it took the cows too far away from the house, so he had decided to work more along the line of beef production than dairying. His case is only that of hundreds of others throughout the province. Vacant lands are rapidly becoming a thing of the past, and what little prairie is left on the farm unbroken will not maintain a herd; besides, through too close cropping, especially in the fall, it is becoming poorer every

year. Cattle have to be fed in the yards too long in the spring because the native grasses are so slow in starting. Consequently, to save labor and feed, cattle are turned on the grass before there is enough to support them; as a result of this they lose in condition and are set back for the summer, besides tramping the pastures to death and preventing the grass ever getting in condition to give the best returns.

There are only two cures for this trouble. The first is to sell out and move to where there is plenty of vacant land. This may suit those who have the pioneer spirit in them and cannot bear to be nearer than five miles to anyone else; but to the man who wants a permanent home with educational and social advantages for his family, the other alternative presents itself. It is to seed down with Brome grass each year sufficient land to pasture all his stock, and thus gradually work into a system of rotation of crops. Or, in other words, a system of what is called mixed farming must be adopted. The farmers, perhaps, cannot see that they are being gradually driven to this by nature—an onlooker can. Slowly, but none the less surely, farmers are being driven from all wheat growing into more diversified work—a line of work that calls out a man's best energies and gives him scope to use to the best advantage the facilities with which he has been endowed by nature.

Where to get hay is another question that will soon be a burning one. With increased population and drainage of the marshes, the difficulty of getting the required supply of hay becomes greater. The solution to this problem is also found in Brome grass. Grow your own hay and save time and labor by doing so. This grass has been tried in all parts of the province sufficiently to know that it is to be depended upon in a way that timothy is not, besides it gives more pasture after being cut for hay than timothy. To those who prefer it, the native rye grass gives excellent results.

Plowing and pot-hunting seldom work well together. The other day a Melita farmer, making a rush for his gun to take a pot shot at geese, managed to hit his wagon and one of his horses with the same shot. The geese were missed and there is a V.S. to pay.

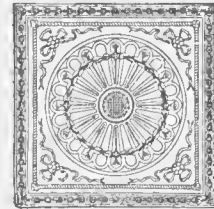
Our American cousins sometimes make curious discoveries. The other day a sample of goose wheat was shown on 'change at Cincinnati and held at 8 cents a bushel higher for seed than the best hard wheat. It is thought to be the very quality of which to make macaroni. Among the collection of valuable seeds recently brought from Russia by Prof. M. A. Carleton is the Kubanka wheat, from which great things are expected. Those who knew the Kinalmeaky farm about ten years ago will recollect the fancy price charged there for Kubanka and Saxonka wheat and the pitiful results from them.

We are indebted to Prof. Shepherd, of the North Dakota Agricultural Station, for recent bulletins reporting the results of various experiments. In grasses our southern friends are not ahead of our own knowledge, though this paper reports one man who started with Brome grass in 1892 and has now 100 acres growing. The Fargo experiments on changing seed wheat correspond curiously with Mr. Bedford's recent assertion that there is no need for change of seed if proper care is taken in cleaning up the home-grown. Selected seed for experimental purposes has been changed round between the Fargo and Minnesota stations since 1892, and the results point to the superiority of northern grown seed over that grown further south quite as much as to the importance of sowing only the best.

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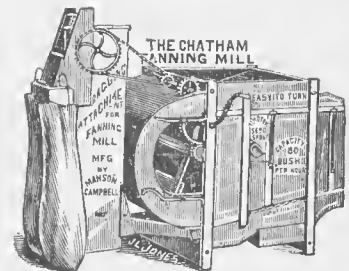


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Clover in Manitoba.

That there have been many failures in growing clover here is well known, and it is pretty frequently assumed that the past is the prophet of the future—that it is a mistake to try any more. But it is perhaps not generally known that even in Manitoba clover can be grown with as much certainty as in Ontario. Such is the case at Whitemouth, and all the way from that place to the Red river good stands of white clover may be found wherever the conditions favor its growth. There are three conditions mainly conducive to clover growth. 1. The wildness and virgin rankness of the soil must be got rid of. 2. The presence of clay. Even on new land, where the clover has been sown, by accident, along railroad grades during construction, it is doing well, and is frequently seen in the ditches. 3. Snow covering. This need not be deep. Kentucky blue grass, which has spread freely round Winnipeg, and at many older points in the province, is little better than clover in this regard. Let it be bared by the wind at any exposed point and it will most likely winter-kill. So with clover. Give it the three conditions named and it will live in Manitoba.

The experience of older settlements on this continent favors the probability of future free growth of clover here. Once on a time Illinois was as shy of clover as Manitoba is to-day. But a few sanguine men held on to the possibility and carried their point. So it was all along through Wisconsin, Michigan and Southern Minnesota. South of St. Paul, 30 years ago, clover was an impossibility. But 10 or 20 years of wheat growing prepared the way for clover, and now every new street that is graded in St. Paul is in a year or two green with clover and Kentucky blue grass. And now there is evidence along the upper Red river that clover will not only grow, but propagate itself freely, just as blue grass had done a few years earlier.

But while this is all true, there are adverse conditions here to be allowed for. The snowfall in most parts of Manitoba is limited, and in spring especially, alternate freezing and thawing tears the roots. In clay there is less risk of this. There is a scientific fact which partly explains the shyness of clover when sown on entirely new land. A special bacillus inhabits the roots of the clover plant and contributes

greatly to its fertility. Observers across the boundary line noticed that the westward spread of clover was at the rate of about five miles in a year, and science pointed out the relation of this steady progress to the life action of the bacillus in the roots of the plant.

Allowing, therefore, for the special local and general difficulties in the way the probability for the spread in this country of clover, beginning usually with the white, is very strong indeed. The value of clover as a part of a western scheme of rotation can hardly be over-rated. In the south clover pasture along with crushed corn makes a choice ration for pigs of all ages. In Ontario clover hay well cured in winter and a clover pasture in summer are found the ideal ration, because so rich in protein, to mix with other foods for profitable pig rearing. Rome was not built in a day, and "pigs in clover," instead of a toy game, may before long be a source of steady profit to the western farmer.

A farmer out Barnsley way had a bit of bad luck the other day. He paid \$30 for a stack of hay and then started to fire-guard it. Result—a blaze that wiped out the stack in short order.

The correspondent of a local newspaper says: "Some of our farmers are not suited yet with hired men. There is still room for a few good, solid men, who are willing to rise at 4 o'clock, work from 7 to 7, chore until 9 p. m., and stay home on Sundays. Wages according to ability."

R. G. Speers, Battleford, Sask., who has had some years very satisfactory experience with Brome grass, says: "When I first sowed it I was advised to use fifteen pounds per acre, but now I find that is too thick for hay. Twelve pounds of good seed is quite enough for hay, and for pasture, fifteen pounds an acre, if the land is in proper shape and the seed gets a fair start. Sow from the middle of May to the middle of June, any time you can catch a good rain, have the land in good order, sow by hand and give one stroke of a light harrow, and mow down all the weeds before they go to seed. Some recommend a nurse crop. I do not, although I am going to try an acre or two this year. It is like all other crops—the better tilth your land is in the better crops you may expect."

Mr. Villeneuve, M. L. A., says he has ascertained that since May, 1898, 465 head of families have located in the St. Albert district.

An old soldier, Ed. Hart, from Aberdeen, Scotland, landed at Melita the other day with ten children to help fill up the country. Six of them are able-bodied boys, the very sort of which to make Manitoba farmers.

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Landscape Gardening.

By J. R. Simons, Winnipeg, Man.

We naturally look forward to the pleasurable occupations of summer—especially after a cold winter—and I think this an appropriate time to refer more fully to the subject of the improvement of farm house grounds. While the newness of the country would seem to suggest that this subject is somewhat premature, yet I am sure that in Manitoba and the Northwest the cultivation of trees, etc., cannot well be too early begun, particularly when nature only requires a fair start to do most of the work herself, not to speak of the very considerable reward obtained for one's labor.

Every farm house has more or less ground around it and, if at present unimproved, the question is, how can it be made picturesque at the least expense of time and labor—for these are valuable on the farm. Some farmers are proverbially neat and tidy, with not a sign of debris or weeds about them, while others are not so well kept, but to make a place look well it is most essential that neatness should prevail. Each farm has its own individuality and therein lies its charm. Nor would it do to have them all alike. For this reason no set rule as to treatment can be laid down. The first things needful are space and a secure fence—with gates—a wire fence with an extra strand or two at the bottom is quite suitable, though a top scantling rail and paint would add greatly to its appearance; or a straight pole fence would answer, that is, for large grounds.

The choice and placing of trees, etc., is the next question, and in selecting these from the bluffs care should be observed to see that they are young and of vigorous growth, as stunted trees, though small, will not thrive, even if well treated. The roots should not be injured, and exposed as little as possible to the air. The following are some of the varieties suitable for transplanting:—Trees.—Balm of Gilead, Oak, Green Ash, Manitoba Maple, Elm, White Birch, Dwarf Birch, Plum, and the different species of evergreen. Shrubs.—Balsam, Cottonwood, High-bush Cranberry, Rose, Buffalo Berry, Hawthorn, Spirea, Sand Cherry, etc. The Manitoba Maple is most readily grown from seed, if sown in a well cultivated garden bed in the fall, and transplanted in the spring, or a year later, if desired, when some inches high, into their permanent places, which have been previously measured off and prepared. The ground should be well cultivated around each tree or shrub. The key to success in growing anything is cultivation, the ground will then retain moisture and enable roots to grow freely.

It is remarkable to see how rapidly these seedlings grow; in three or four seasons handsome and hardy little trees are thus obtained. After the second year the side branches should be carefully pruned off with a sharp knife, leaving the main stalk, until it is sufficiently high to allow it to branch. Good hedges can be made with these trees by placing them in a row say a foot apart, the first or second year after sowing.

I would suggest the drawing of an outline plan of the grounds on paper and

placing thereon the locations of trees, shrubs, flower beds, walks, etc. In this way the peculiarities of the grounds can best be treated. Trees should not be placed too near the house or too close together, except in the case of a hedge, as when they grow larger, they have a closing-in effect, and destroy the sense of space which is so desirable. A group of trees at the back of the house, that can be seen from the front, lends an artistic air to the view. It is well to place a row of trees around the fence 10 or 15 feet apart, but for the main portion of the grounds a more informal arrangement in both situations and varieties is preferable, giving a park-like appearance. A number of round spaces could be staked off and a high growing tree placed in the centre, with shrubs and evergreens (or shrubs only) alternately around it for about 5 feet from the tree, each in a cultivated circle. Small flowering or plain shrubs should be placed here and there on the lawn, personal taste suggesting the best locations, but leaving plenty of room for flower beds, which are, of course, necessary to add brightness to the garden.

I am presupposing that the grass is already there, but if it is past coaxing or mending the ground should be plowed up in the fall and in the spring thoroughly harrowed, sown with grass seed and rolled. This ought to produce good turf. But the wild grass will generally be found to answer. This should be well raked in the spring and pretty regularly cut with a lawn mower during the summer, thus killing foreign annuals, strengthening the sod and brightening the effect of the garden generally. Where there is a small dent or hollow the piece could be dug up, filled with top soil, patted level and sown with grass seed. The flower beds should be placed in groups, leaving good stretches of lawn.

Space will not permit of my mentioning many varieties of flowers or the best modes of cultivating them, but I find in our short season and the distance farmers are from greenhouses, that rapid growing flowers which can be sown in the open bed give the best results. For brilliancy, in such a garden as I refer to, the whole bed should be sown with one kind of seed, say poppies in one, dwarf nasturtiums in another, and so on, using small growing plants for borders. Nasturtiums should be planted a foot or more apart each way. Double sun flowers can be used in the absence of shrubs to much advantage, also the giant spider plant, castor bean, and sweet pea. The latter seed should be sown in a little trench as early in the spring as possible. As the plants develop the earth should be gently closed around them, thus giving the roots depth. Supports should be provided for them. Calioptis is also a pretty bushy flower, growing two feet high.

Other features, such as a vine-clad summer-house, and a rockery, might be added. A temporary summer-house (if a better one cannot be had), constructed with four upright poles imbedded in the ground, braced at the top and having four shorter poles meeting in a peak, for a roof, is easily made. Strings or coarse wire netting should be added for the vines to grow upon, leaving space for a door. The wild cucumber is so well known that I need scarcely mention it, but this plant would be useful in making covering for such a summer house. Other suitable climbers are the hop, Virginia creeper, wild grape, morning glory, etc. In parts where stone can be obtained, a rockery might be tried. They look well in any situation, almost. Climbing nasturtiums are suitable for this purpose, and, in a shady location, wild ferns.

Too few farm houses have a veranda. It lends a comfortable and finished look

to a house and where there is one vines could be trained up the posts. It is not advisable, however, to grow vines over windows, as they shut out the wholesome sunlight and air. In dry spells, trees, shrubs and flowers should be well watered, also at the time of planting.

The entrance lane should be wide, a narrow drive never looks well, and here is a most suitable place for hedges or rows of trees. Hedges should be trimmed each year for a time to make them grow compactly and even. The improvements I mention cannot, of course, all be made in one season, but I would earnestly advise that a little be done each year in this direction by every farmer, and it will surprise many to see how soon our farms will grow picturesque and beautiful.

Commercial Value of Trees.

If a farmer wants to leave a legacy to his children that will cost him only a small amount of money and labor, he should plant out a few acres of forest trees. The following facts in a Minnesota exchange should set every farmer thinking:—

"John Weaver brought to mill a couple of cottonwood logs from a tree grown on his farm in Kilkenny township, Le Sueur county. From the logs were sawed 313 feet of inch boards. The tree from which logs were cut was 26 years old, from the seed, or an average of 12 feet of lumber for each year since planting the seed. The butt cut was 15 inches through, and 26 feet from the ground the tree was 10 inches through, furnishing from that point up a large quantity of fuel. With one tree to the rod an acre would carry 160 trees, and if they averaged the size of the one herewith reported the acre would produce 50,000 feet of lumber in 26 years. The lumber is now worth here \$10 per M, at which rate the acre will produce \$500 in 26 years, or \$19 a year from the time the seed is sown. Slower growing timber would be more valuable when grown, so that the average rate per acre would probably not be materially less than this estimate. Surely a few acres of trees on every farm is a good crop for the farmer to grow."

There are odd corners on many farms that could be set out with trees to advantage, as well as a serviceable windbreak around the farm buildings. Planted thicker than intended finally to grow the cuttings in a few years will add greatly to the wood pile.

The Rake as a Weed Killer.

Almost every progressive farmer knows the value of the harrow and weeder in clearing his recently sown grain crops of annual weeds. How many farmers and farmers' wives are there who have gone a step further in the same direction and used the rake as a weed killer? An hour's work with a rake at the right time—just when the weeds are pointing through among the garden crops—will kill more weeds than would two hours' work with the hoe a fortnight later. Among broadcast seeds the rake won't do, but for any crop drilled in on the flat the rake is the best of all weed-killers if used in time, and the dose frequently repeated. For potatoes and corn, either in field or garden, the harrow cannot be beat in the same line of work. Try both this year and see how much hoeing it will save.

"Do you raise vegetables?" "No, I only plant them; my chickens raise them."

Pruning.

By Max. D. Major.

Pruning is in a sense an art, as the first things necessary is the eye to see the tree you can possibly make out of a very great number of extra branches. This faculty cannot be taught and can only come by practice. In the case of young trees the desired shape must be in the mind first, and from year to year the young branches cut off wherever they threaten to interfere with the desired shape. If the tree is large and has been neglected, it becomes necessary to cut out larger branches, and although almost all authorities tell you that this is injurious to the tree, you cannot help it, for the surplus wood must come out or the fruit will be small, inferior, and tasteless, on account of the exclusion of the sun by excessive foliage.

By choosing the proper time of the year, which is just after the fruit ripens, to do your pruning, most of this injury will be avoided, besides assisting nature just when she most needs it. This will be more fully understood when we examine the nature of the fruit trees. As every one knows the tree blossoms and fruits, and as soon as the fruit is dead ripe, it falls, and thus is consumed the grand effort of the year, namely, to perfect the seed and to place it in as favorable a position as possible for re-production. The tree then goes to work immediately to produce material for the production of another crop the following year. Now, if there are a great number of branches the sap will necessarily be spread out over a very great surface, and as the time is short and the supply limited, it inevitably follows that the fruit will be small. But if we thin out all but a few fine healthy branches, and in the case of plums, shorten the ends considerably, we cause the sap to accumulate in a smaller surface, and a greater number of fruit buds is the result, together with a finer quality of fruit, both in size and appearance. This I have proved over and over in my little orchard of selected native plums in Kildonan.

I have also found, though I cannot give a satisfactory reason for it, that very large limbs may be cut off at that season, and the tree suffers no injury, if the limb is sawed close to the trunk. The tree certainly does not bleed, and one might say no suckers grow, so few are they. This is very fortunate, as these native plums are so vigorous that if pruned in the spring they throw out innumerable suckers, which must be cut off the same season.

In shaping the tree, first stand off and look at it and endeavor to see the possible tree among the tangle of branches. Then make an opening and saw or chip away, taking a look at it occasionally from a little way off. Leave the shortening until the last. Cut out all branches that turn or point down on the lower part of the tree and all that point inwards; then one of any two that cross or threaten to cross, all dead limbs and twigs, of course, and finally plant your ladder and chop off the ends. Don't be afraid of it, cut them well back, say to $\frac{3}{4}$ -inch thick at the point, but see that you leave the tips much the same height, not one branch sticking up further than another. All the time you are doing this you will be training the eye and you will find a real pleasure in seeing a nice shapely tree come out of a mass of neglected branches—that is, if the orchard has stood too long without pruning.

But why write about pruning in Manitoba? it is asked, where fruit trees have been practically a failure. The answer is, that fruit trees from the east have been

almost a total failure, but the readers of the Nor'-West Farmer will remember an article by me in the October number, where I told of my success with selected native plums. Since then I have sold a number of young trees, and I believe the near future will see a wide distribution of this excellent variety planted for us by nature herself, and it is for the proper care of these that I am giving a little of the knowledge I have acquired during many years of observation and experience.

The same rules of pruning apply to the crabs, only I found that they did better not to be shortened. My remarks in regard to the season apply to currants and gooseberries as well, although these will throw up a quantity of suckers. In pruning these latter a system of a succession should be followed, that is, the bush you plant should bear when three, or at any rate, four years from the cutting, in the meantime let three or four good suckers grow each year. When the fruit is picked from the oldest wood, cut that wood out, as also all the superabundant suckers. You thus keep your bush young and the fruit large. This applies to black currants as well.

Garden For a Small Family.

By Cypress Vine, Clearwater, Man.

As the last few days have been somewhat mild, with a hint of melting snow and balmy spring some time in the not far-distant future, I thought a talk on gardening might cheer our hearts after the bitter weather we have experienced. Then, too, we are almost deluged, in every mail, with seed catalogues, and as we scan the interesting pages, a wild desire possesses us to try almost every vegetable and flower described therein. I have, after a little experience, found it best not to make a list till after the fever-heat has subsided, and then to choose first only the more common vegetables, such as onions, cabbages, carrots, beets, etc. After looking this over, I perhaps find I might have time to try something a little finer than these, as celery, tomatoes, etc., but of one thing be mindful, do not attempt more than you are sure you can cultivate with success, as a large, ill-kept garden is a waste of money, time and labor, and tends to weaken your enthusiasm for another year. I would rather err on the side of too little than too much. Unless a man or boy is kept for choring purposes, not much help can be counted on from the men folk, and that only in flashes. In a small family if the wife is well and comparatively free handed, almost all the help she needs is the drawing or pumping of a barrel or tub-ful of water in the morning ready for watering in the evening.

For early use, celery and lettuce should be sown in boxes in the house about the beginning of March, and removed to a hot-bed toward the latter end of April. This will give greens for use at least by the 15th of May, or thereabouts. Some sow their cabbages and cauliflowers in this way, but that brings them too early for late fall or winter use, and to sow two sets makes rather too much work. Lettuce and radishes are best sown in beds at two or three different times, so as to keep fresh supplies coming on. Peas, corn, beans, cabbage, cauliflower and cucumbers (when transplanted from the hot bed, which I do about the 10th of June), require comparatively little attention, save with the hoe, so that one is left free for weeding and watering the smaller plants; these two tasks I find take constant watchfulness and care. However, you

are amply rewarded by the healthy and easily prepared changes which can be furnished for the table.

Do not have your garden too far away from the house, but in a quarter most remote from the barn-yard, that can be procured with the above advantage, as the fowl frequently take fits for exploring, where they are not wanted. By all means have a few flower beds, not away down nearest the road, that passers-by may admire, but near the door, so that you may enjoy the sight and catch whiffs of the perfume. Above all, try not to get discouraged during those dreadful winds which so often prevail just in seed-sowing time; endeavor to be careful and attentive and you will have a fair result, even in a backward season.

Sweet peas grow readily in almost any soil, but like a fairly heavy one best. Be sure and plant some around the house or other convenient place. They add much to the beauty of home. If you haven't tried them, do so.

The Canadian Bee Journal reports: As far as we can make out bees throughout Ontario and Quebec have wintered fairly well. Some of those who have grown careless, or who have been busy with other matters and neglected their bees, have lost heavily. This winter has demonstrated more than ever that there is no trouble in wintering a good colony with good stores put away as approved by our best bee-keepers.

A correspondent at Katcpwe, N.W.T., suggests that the reason why trees do not sprout from the roots in this country and so form a second growth is that all our wood cutting is done in winter. The question is an interesting one, but this suggested solution does not cover nearly all the ground. The "copsewood" found in a good many parts of England and Scotland, and which is cut for special purposes every few years, is usually found where the rainfall is most abundant and on soils porous and favorable to free growth. Some species of trees take freely to such modes of growth and others do so sparingly or not at all. The writer speaks of his experience in the Qu'Appelle valley, and it is quite possible that if some varieties grown there were cut over in May, they might strike out afresh from the root. But the older the tree the less likelihood is there of any second growth, and we know of no cases anywhere in which poplar and Balm of Gilead ever strike out root growths. On the Boyne, near Carman, and at all low-lying points along the Red River, elms and bass-woods, if not too old when cut, have struck out quite freely. Wherever bottom water is too far off and the rainfall limited it is pretty certain that trees will only take hold after the land has been prepared by cultivation. Where the conditions are favorable poplar and Balm of Gilead will readily propagate themselves by means of the down from their spring blossoms.

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Agricultural Societies and Their Plans.

We continue in this issue the short sketches of the agricultural societies of the province. The difficulties some of the societies have labored under, and still finally succeeded in clearing off all indebtedness, should be an encouragement to other societies to take up the work with greater energy and determination to make it a success.

Morden.

This society dates back to a time when Morden was not in existence. In 1881 the South Dufferin Society, as it was then called, held a show at Mountain City. It was transferred to Morden in 1884. It was a hard pull in those early days to keep a society alive, and the Directors had usually to put their hands in their own pockets to make up the deficits when the prize money came to be paid. Some years ago part of



J. T. Hutchison,
Pres. Morden Agricultural Society.

the grounds of the Turf Club was bought and a capital two-story octagon hall built for exhibition purposes. So recently as 1894 there was a deficit of \$160 on the ordinary funds and a debt of over \$2,000 against the building. The district round Morden is one of the very best in the province, and the exhibits have, as a rule, been abundant and good. The society has about 200 members. Within the last few years its funds, by good management, have

been brought into a very satisfactory condition. It has buildings and grounds worth over \$2,500 and a total indebtedness of \$300, a pleasing contrast with its former standing. It has been found that the gate money is greatly increased by securing a display of "attractions and horse racing. The stock of the district is being improved, and some good

ones are shown, but there is still room for improvement. The vegetable and fruit exhibit here is about the best in the province. Such tried experts as Oswald Bowie, A. P. Stevenson, Martin Pirt and Nelson Bedford have always something choice to show, and the garden produce of the district generally is both abundant and excellent. J. F. Hutchison is the energetic president of the society, and John Gilchrist the able sec.-treas.

Cartwright.

The progressive agricultural society at Cartwright has held sixteen annual exhibitions. The presidents of the society have been T. S. Menarey, A. Laughlin and John Gimby. M. Watts has filled the position since 1892 and appears to be the right man in the right place. In 1891 the finances of the society showed a deficit of \$200. At the present time this deficit has been changed into a handsome surplus of \$300. Besides this, under wise administration, the

society has acquired 10 acres of land and fenced it; in fact, the last audit showed the society possessed assets to the total value of \$715 and no liabilities. Much of



M. Watts.
President Cartwright Agricultural Society.

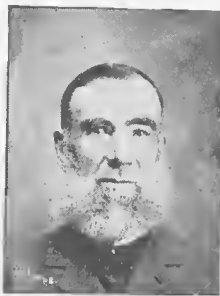
the success the society has achieved has been due to the generous and substantial interest which Lord Strathcona and Mt. Royal has always shown in it. This year the society is presenting on behalf of his lordship a massive silver cup to be given for the best 14-in. walking plow. The competition will take place early in the plowing season. The present secretary is A. W. Bagnall, who has held the position since June, 1893. We are assured by him that it has always been a pleasure to work for the interest of the society. He is well known in the district, having lived in Cartwright for ten years. The directors are: J. P. McKibbin, J. McKenzie, W. Waldie, J. Wright, D. Duncan, O. Howard, H. W. Coltart, G. B. Way, and H. McKinnon, all well-known men in the district and all working together for the interests of the society.



A. W. Bagnall,
Sec'y.-Treasurer Cartwright Agricultural Society.

Cypress No. 1.

This society was organized at the old village of Stockton on Oct. 15, 1888, with a membership of 33. The society's directorate at that time were Alex. Card, J. C. Smith, J. Graham, J. G. Sturgeon, J. Atkinson, R. H. Ferguson, A. Porteous, William Ingram, James Graham and F. Butcher. Of these, three have remained connected with the society, either as directors or private members continuously since its formation, viz., Messrs. Card, Atkinson and Ferguson, and have assisted materially in the



John Atkinson.
Pres. Cypress Agricultural Society, No. 1, Glenboro.

tion, viz., Messrs. Card, Atkinson and Ferguson, and have assisted materially in the

pronounced success of the society. For a number of years the society had neither land nor buildings, their first venture being the erection of a commodious hall, which served their purpose for a few years only. They next purchased a plot of four acres adjacent to the skating rink, using the rink for exhibition purposes for a number of years.



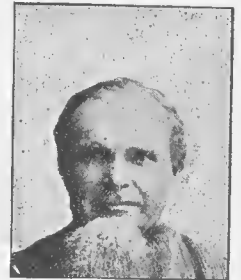
Fred Axford,
Sec.-Treas. Cypress Ag. Soc., No. 1, Glenboro.

This was finally found inadequate for the growing needs of the society, and in 1898 they purchased 50 acres of land from the C. P. R., upon which they have erected an excellent hall. One of the best half-mile tracks in the province is laid out thereon, and the track is fenced completely around. A close board fence surrounds the property and a commodious grand stand is erected on the grounds, costing alone the sum of \$300. The society have an efficient directorate for 1899 and purpose continually improving their property. In this they are ably assisted by the citizens of Glenboro, who are justly proud of the society's success. The exhibits at the yearly exhibitions are continually increasing in numbers and improving in quality. The present president, John Atkinson, has been re-elected on several occasions to the position, and the secretary, Fred Axford, has just completed his tenth year in the service of the society.

Springfield.

This society was organized in 1883, and consequently is one of the oldest in the province. It has from its inception maintained a reputation second to none for the general excellence of its exhibitions. Whilst horses, cattle (Short-horns and the grades mostly being shown, though other breeds are represented to a small extent), hogs, grain and vegetables are generally a good exhibit. Dairy products are perhaps the most notable feature of the show. It is claimed by the officers of this growing show that the number of exhibits is in excess of those shown at the Winnipeg Industrial — and all from private dairies. The nature of the land and its proximity to Winnipeg makes this district particularly suitable for this branch of farming.

A few years ago the society was instrumental in introducing some new varieties of grain, but since the establishment of the experimental farm at Brandon this has been discontinued. Like all other societies, it has now largely resolved itself into a committee for getting up annual exhibitions. These are held at Dugald, about 14 miles east of Winnipeg, where the society owns eight acres of land enclosed by a 7-foot board fence. The exhibition building is 36x150 feet, and is rented during the winter for a skating rink. The amount offered in prizes for the present year is about \$1,150. The number of entries has varied during the past few years from 900 to 1,600. The society is entirely free from debt and is one of those which up to the present time has always managed to straighten up its accounts before the annual meeting. The president is W. Jolly, and the sec.-treas., O. B. Harvey.



W. Jolly,
President Springfield Ag. Society.



O. B. Harvey,
Sec.-Treas. Springfield Ag. Society.

Brokenhead.

This is one of the very youngest of our agricultural societies, and no society in the

province has had such hard luck. One or two settlers have held the fort for a long time. J. D. Campbell has a finely sheltered



D. T. Fawcett,
Pres. Brokenhead Ag. Soc.,
Beausejour.

farm on the Brokenhead river, and the white clover found in the open spaces of the bush was started by him many years ago. He has a garden that can hardly be beaten anywhere in the province, and a lot of good stock. Messrs. Irvine and Hoban are also settlers of old standing. A good many new settlers have come in in recent years, and

it was arranged to form an agricultural society and hold a show in 1896. A good large hall was built for the display of the produce of the district, and the show arranged for took place on Oct. 1st and 2nd, 1897. That is a date to be long remembered for the most terrible prairie fires ever known in Manitoba. The Clearwater district, and a wide area reaching from Morris to Winnipeg were swept by fire.

North of Reaburn was another terrible conflagration, and the district around Beausejour had an equally disastrous visitation the same night. The new hall was nearly wrecked by the violence of the gale which was a principal agent in spreading the fire. Assistance had to be given by the government to the many new settlers in this district, whose crop and buildings had been destroyed. In the circumstances it was decided not to hold any show in 1898, but to devote the amount of government grant available for that purpose to the purchase of seed for distribution among the numerous sufferers by the fire. It is hoped that this season there will be enough stock and produce to warrant the holding of a show that will worthily represent the resources of this the most easterly agricultural district of Manitoba that has organized for such purposes.

Norfolk No. 2.

The agricultural society in North Norfolk was organized in 1883 and has been working along quietly ever since. A good show has been held each year, one year at Macgregor and the next at Austin. The membership at its inception was about 30 and has gradually grown to 70, its present membership. The yearly prize money amounts to about \$400. On account of holding the show only alternate years at one point no attempt has been made to erect buildings. W. B. Gilroy, well-known from his connection with the Austin creamery, is the secretary of the society. He has been



W. B. Gilroy,
Sec.-Treas. Norfolk Ag. Soc.,
No. 2, Austin.

in the country for twenty-one years and has been connected with everything tending to the prosperity of the country, having been reeve for five years and secretary-treasurer of Austin and Emmeline schools for fifteen years.

Holland.

The Holland Agricultural Society was one of the first established in the province, and dates back to about 1881 or 1882. The Norquay government were then offering inducements pretty much on the same lines, and to the same extent, as the Greenway government does to-day. The society has ever been in a fairly successful financial position. It has been held continuously at Holland and Treherne ever since, and has been increasing in importance year by year. The prize lists during the first few years show numerous entries in the cattle class, a few sheep and swine, but scarcely any horses. The latter is now one of the largest exhibits, and will compare favorably with any other purely local district show. The farmers in this district have been careful in using nothing but first-class stallions, among which we may mention Better Times, Blacksmith, McNab's Heir, Carbine, and Aberdeen, all well known horses in the Winnipeg show ring. There are other parts of the province far ahead of the Holland district in the matter of cattle. The soil, climate, etc., are so favorable to the production of wheat that farmers have been paying attention to this department to the neglect of stock; but this is a matter which will right itself in future years, and the sooner the better. Just now cultivation for grain has been carried on to so great an extent, that in many parts nothing but the road allowance is left for stock pasture. A few have been raising patches of timothy for a few years, and now Brome grass is receiving attention, having been very satisfactory wherever tried. The results in future grain crops, after lying two or three years in grass, are so marked that farmers must see it to be to their interests to get more into stock, and thus of a necessity have a rotation of crops. A summer show was tried for a few years, but the society has now gone back to a fall one, and have found it in nearly every way preferable. The show of '98 was one of the most successful ever held, the number of entries in all classes being 611, and the prize list \$800. The show for this year will be held on October 4th. More farmers are now taking an interest in and becoming members of the society. The last annual meeting was numerously attended, and great interest shown in the work of the society. Chas. J. Crawley is the sec.-treas. of the society.

Hartney Agricultural Society and Farmers' Institute.

The agricultural society of Hartney is progressing slowly, but not making the growth that some of its members would like. On account of the dry weather and the prospects of a very poor crop, it was decided to hold no fall show, as it was found impossible to raise sufficient funds to make it worth while attempting one, so it was given up. The annual meeting was held, however, with an encouraging membership, and efforts will be made to hold a good show this year. R. Jackson was elected president and R. T. Sibbald secretary-treasurer. Mr. Sibbald is also the



R. T. Sibbald,
Sec.-Treas. Hartney Ag. Soc.
and Farmers' Institute.

worthy secretary of the Avondale Farmers' Institute. The interest in the institute is steadily growing and a number of very successful meetings were held the past winter. There was a large turnout at the first meeting of the winter to hear the speakers sent out by the Department of Agriculture. J. M. Fee is the president of the institute.

Belmont.

Belmont is a rising town on the Northern Pacific railway and the centre of a now fairly well settled district. Some capital settlers went in very early and are still there. One example is the Gibson family, who, among them can turn out a good plowman as need be wished for anywhere in Manitoba. A large number of good stock of all kinds is kept in the district and the quality of their grade stock is very satisfactory. The last show was held on Oct. 4th, a very bad and stormy day, but there were 700 entries. Shorthorn blood leads in the cattle, and the show of grades, light and heavy horses, sheep, swine and poultry was excellent. In vegetables, roots and domestic exhibits the display was large and of choice quality. We have confidence in the future of the society. Its funds are all right, and we expect of this society a still greater degree of prosperity in the future than it has had in the past.



J. C. Smith.
Pres. Belmont Agricultural
Society.



W. B. Axford,
Sec.-Treas. Belmont Ag.
Society.

Summer Shows.

Portage la Prairie—July 5 to 7.
Oak Lake—July 7.
Winnipeg—July 10-15.
Brandon—July 18-21.
Virden—July 25-26.
Regina—July 25-26.
Turtle Mountain, Boissevain—July 27-28.
Killarney—Aug. 1-2.
Minnedosa—August 2.
Central Assiniboia (Indian Head)—Aug. 2-3.
Carberry—Aug. 3-4.
Neepawa—Aug. 8-10.
Manitou—Aug. 9-10.
Rolling River—Aug. 18.
Toronto, Ont.—Aug. 28-Sept. 9.
London, Ont.—Sept. 7-16.
Ottawa, Ont.—Sept. 11-23.

Will secretaries of other shows intending to hold a summer fair, please notify us of the dates decided upon.

Saltcoats, Assa., March 13, 1899.

J. A. McGill, Esq., Neepawa, Man.

Dear Sir,—Just a line to let you know that I received the young sow all right. I am perfectly well satisfied with her so far, as she is by far the best appearance at her age of any young pig I have had yet from the different breeders I have been dealing with. Yours sincerely,

Advt.) WILLIAM HUME.

Note.—The above gentleman keeps a herd of about 75 hogs.

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IS THE

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\$15,000
IN PRIZES.



This Year,

July 10th to 15th.

Prize Lists, Illustrated Programme of Attractions and of the Horse
Racing Events sent on application.

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And all kinds of

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THE E. B. EDDY CO., Ltd., Hull, Montreal, Toronto.

TEES & PERSSE, Agents, WINNIPEG.



The Bravest Battles.

A constant reader writes: "I lately heard the following verses quoted by a minister, and as they are well worth repeating and suitable for your Household columns, I have pleasure in sending them to you, trusting you will find space to print them. I think the piece speaks in a beautiful way of the grand work being done by 'the mothers.'"

The bravest battles that ever were fought,
Shall I tell you where and when?
On the maps of the world you will find them not;

They are fought by the mothers of men.
Nay, not with cannon nor battle shot,
Nor sword nor mightier pen,
Nor with eloquent word or thought,
From the lips of eloquent men.

But deep in a walled-up mother's heart,
Of a mother who would not yield,
But silently, bravely bore her part,
There, there is the battle-field.

No marshalling troops, no bivouac song,
No banner to gleam and wave,
But, oh! these battles they last so long,
From babyhood on to the grave.

But faithful still as a bridge of stars,
She fights in her walled-up town,
Fights on and on in the endless wars,
Then, fighting unseen, goes down.

Oh ye with banner and battle shot,
And soldiers to shout and praise,
I tell you the kingliest battles fought
Are fought in these silent ways.

Oh, spotless mothers in a world of shame,
With splendid and silent scorn,
Go back to God as white as you came,
The kingliest warriors born.

The Art and Science of Cooking.

In the report of the Experimental Union of Ontario, referred to elsewhere in this issue, there is an address given by Mrs. Rorer, the well-known American cooking expert, from which we make the following selections. This lady had been favored with a superior education as education was then understood. She was versed in astronomy and algebra, but for the details of domestic life such knowledge was practically valueless. She could not boil a potato, or bake a decent loaf of bread, or launder a shirt, still less tell the reason why one way of doing it was better than another. She has since learned the art, the *know how*, and the science, the *know why*, and is capable of making such things clear to those who care for her guidance. She started her address with what she calls "body building," or the place and function of the various foods used by civilized man.

"The average farmer spends much time in learning how to grow crops, how to raise animals, how to keep them, and how to get the very best from them. He keeps them lean as long as he wants them so; when he is ready to sell he quickly fattens them. Sometimes these same men keep the animals in good condition while the family is allowed to fall ill, from neglect or ignorance, and the doctor is called in to rectify, as far as he can, the consequences of such ignorance. If half as much attention was bestowed to the health, care and general living of the family in the house as to that portion which resides in the barn,

BRITANNIA, BEAVER and BUFFALO

THE FINEST BLENDS OF INDIA AND CEYLON TEAS PACKED.
For Sale by all Grocers in lb. and ½lb. Sealed Lead Packets.

MackENZIE & MILLS, 224 Princess Street, Winnipeg.
PACKERS AND WHOLESALE DEALERS.

the doctor's buggy would be seldom at the door. Sickness is certainly caused by disobedience to the laws of nature. We are governed by our appetites. The first palate, that of the mouth, is our average guide; the second, the stomach, when greatly abused, creates a little uneasiness. But nature is greatly tolerant of our blunders. After repeated offences she ceases to be tolerant. Strong healthy people eat unwisely, and may appear unharmed by the consequences, but it tells on their offspring, and they degenerate. An unperverted appetite can generally be trusted in the selection of the varieties of food needed to maintain the different parts of our system, but we ought to know just what each kind of food we use can do for us and how to build up a healthy body with the best and cheapest material within our reach. Eggs, for example, are rich in material fit to build up our tissues, while starchy foods give warmth and force but are poor in muscle.

"In our educational institutions it is high time that all teachers were imbued with the idea that each has a responsibility to one's self; that our bodies are given to us to religiously care for, and unless we do this in the best manner we certainly must pay God's penalty. In the education of woman many things have been taught to make her exceedingly attractive, such as playing the piano, painting, etc., these are all well enough, they teach her to use her hands; but let her learn to use them in things for practical every-day life, such things as affect us vitally. Domestic economy is not a single subject, but a collection of many of our most interesting studies. In large cities the masses must watch health most carefully. The lack of fresh air, and, as a rule, good water, make it doubly necessary. But watch the brawny, muscular fellow picking up that trunk, placing it on his shoulder and carrying it for several blocks without the least sign of fatigue; it is a toy in his hand—why? Nitrogenous foods are handy and he uses them freely. Stop off at a small place where nitrogenous foods are scarce, with your heavy trunk, and watch that man carry your trunk across the platform; several times he tries before he succeeds in lifting it to his shoulder—why? Because his tissues are worn out, and have not been repaired, nor has he used the proper sort of force and fuel foods—the first porter, no doubt, uses beef and porridge—or pork and beans; the second, pork and potatoes, or white bread and butter. In most countries, the ordinary day laborer should combine at each meal, proportions of one-fourth nitrogenous food to three-fourths carbonaceous or heat foods; the carbonaceous division may be divided again so that, in the winter, it will be composed more largely of fatty foods, and in the summer starches, such as potatoes, rice with a small amount of sugar. If he is rich, he will get his nitrogen from the red meats, beef or mutton; if his purse, however, is of smaller size, he can get it equally well from whole wheat bread and old peas and beans. If the latter he cooked carefully and in a toothsome manner, they are by no means inferior foods. The man who depends upon tenderloin steak does not find his muscles in any better condition than the

PACKAGE TEAS

ARE THE BEST.

brawny workman of the north who uses oatmeal and beans. The exercise of the latter increases his circulation, thereby he takes in more oxygen, and is able to digest with greater ease these rather complicated foods. It must be remembered that last night I canvassed the audience, and found that even here, among college people, few of the housewives knew the composition of potatoes, which they probably see and eat three times a day. If one does not know the composition of material, and its nature, how can they cook it well; and we do feel sometimes that the cooking of the potato is a lost art. Potatoes, by the way, are heat and force food, lacking nitrogen. In Ireland, where they are the chief diet, they are balanced by buttermilk. One quart of buttermilk with ten pounds of potatoes, three pounds for breakfast, four for dinner

Notice!

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MONDAY, MAY 29th,

WHEN THE

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All Persons having Coupons and Wrappers must have them in before that date.

We will continue to give Books and Pictures FREE for Royal Crown Soap Wrappers. List mailed free on application.

THE ROYAL CROWN SOAP CO.

and three for supper is the usual allowance for a laboring man who lives solely upon these simple foods.

"Going back for a moment to the combination of foods, if we consider many tables throughout the country, we find pork and potatoes almost daily upon them. This pork is largely fat, heat and force food; potatoes the same; consequently, this class of people lack repair food for the tissues of the body. If any of the tissues of the body lack the necessary repair material, the whole frame becomes weakened, and it is frequently impossible to return it to its normal condition. The nitrogenous foods, as meats, eggs, milk, old peas and beans are repair foods—while fats, starches and

With all her knowledge, Mrs. Rorer writes as if No. 1 hard and its unrivalled food products were almost unknown to civilized man. We merely note this shortage and go on to the points on which her information is greater and her teaching quite reliable.

"We have dwelt upon the necessity for a carefully regulated dietary: of equal importance is the care of the body. The excretory organs must always be kept clear. The skin, being one of the most important of these, makes a frequent bath of cold or warm water, according to the constitution, an absolute necessity. There is little danger of taking cold if the skin is kept in good healthy condition, all excretory organs

for the poor, a given quantity containing more nitrogen than could be procured for perhaps ten times the money, in beef. In speaking of the cooking of beans the article stated that they must be well soaked over night to be digestive. This poor soul, soaked them over night and ate them."

Mrs. Rorer went at considerable length into the desirability of securing fuller knowledge of cookery as well as other branches of domestic economy among the children of the working classes.

Dr. Mills, at this stage, called her back to points in the every-day routine of domestic cookery, beginning with the boiling of cabbage without odor.

A. In the first place you all know, without my telling you, that cabbage is more digestible raw than cooked. The why is easily explained, if one knows the chemical condition of cabbage. The calcium oxalate is soluble in water; if the cabbage is boiled carelessly or rapidly, this secretion is dissolved in the water, thus the cabbage is rendered less digestible from the fact that you have taken from it one of your aids to i.e. digestion; and, in this rapid boiling also, you dissolve a volatile sulphurized oil, the odor of which is not agreeable and is thrown throughout the house in the evaporation of the steam. To prevent this, then, throw the cabbage into boiling water, to which you have added a little salt. This will coagulate the outside; then push the kettle back where it cannot again possibly boil, until the cabbage is tender and white. The water may be kept at a temperature of 200 deg. (Fahr.). and the kettle uncovered.

Dr. Mills—Q. Why?

A. The air falling directly upon the water in the uncovered kettle prevents the danger of boiling and enables the cook to watch it more easily.

Dr. Mills—Q. Do you use boiling water to cook all vegetables?

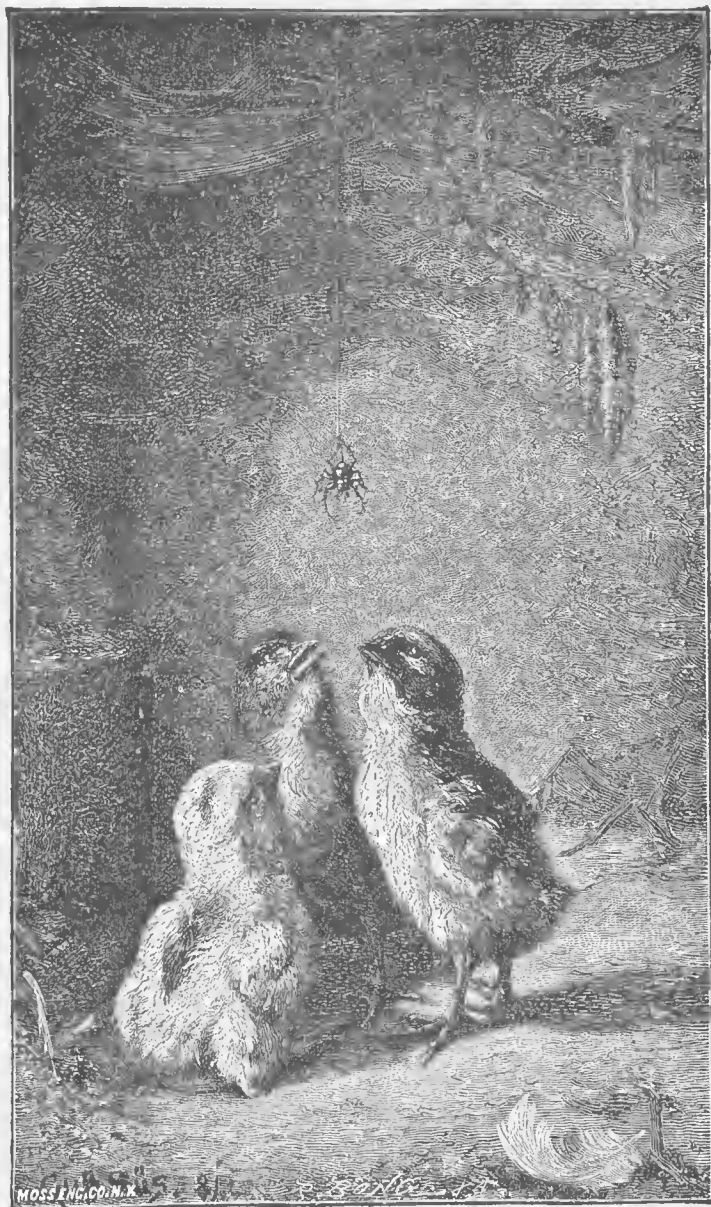
A. Yes. Old potatoes, however, sprout at the expense of the starch nearest the surface of the potato. If they are soaked in cold water, and put to boil in cold water they will frequently become more mealy than when put into hot water. This is the only exception of which I can now think. Green and top ground vegetables retain their color and flavor better if cooked in salted water; while the white and underground vegetables, rich as they usually are in woody and amylaceous fibre, are better cooked in unsalted water; the fibre is less toughened.

Dr. Mills—Q. Tell us how to cook porridge. And do you consider it a good food?

A. This depends entirely upon the cooking. The Scotchman builds his muscle and brain on well-made porridge; while the Japanese athlete finds the rice of his country quite as well adapted to his needs. Oatmeal, sold under the name of Scotch or Irish or steel-cut oats, requires long, slow cooking, and is much better if cooked in a double boiler—that is, an upper boiler sunken down into an under one containing hot water; as a chemist would express it, in a water bath. This prevents scorching and removes the necessity of stirring. Four or five hours is not any too long, and where one has a hard coal fire it may be put over at night and cooked until morning. Five tablespoonfuls of such oatmeal will thicken one quart of water to the proper consistency. The water first used may be boiling, the oatmeal thoroughly mixed with it, the kettle covered and left to cook.

Dr. Mills—Q. How would you cook potatoes? In the jackets or not?

A. If cooked in the jackets they certainly have better flavor; without the jackets the potash salts, soluble in water, are lost. This may, in some cases, be an advantage. Drop them into boiling water; keep them at boiling point until you can readily pierce them with a fork; if the centre seems to be just a little hard and the outside done, check the boiling by adding a cup of cold water;



"So Near and Yet So Far."

sugar are heat and force foods. The first corresponds to the structure material of the house, the second to the fuel for heating. We do not need to run nitrogen-mad, as the average dietician of to-day is doing, but we must have sufficient to give us an evenly-balanced dietary. The dietary should not be alike for every man; the student would certainly be most unwise to live after the same manner and eat the same food with the laborer; and with four men, all sitting at the same table, having different occupations, it is not necessary that each one of the four shall have a separate meal cooked, but it is necessary to have sufficient variety from which each one can select that best suited to his requirements."

open and clear, with a properly arranged dietary. The weather may be what it pleases, and the changes severe, you are prepared for it.

"Cooking should be taught in every city and country school. Friday afternoon, in my young days, used to be given to sewing. Why not give it now to cooking? The children taught, going to their homes, must throw an influence over the household not attainable from other studies. During the early part of my life, which was devoted to missionary work in the slums of New York and Philadelphia, I found one woman—a woman with four children, eating a pan of uncooked beans. In one of the daily papers there had been an article recommending beans as highly nutritious

and bring again quickly to a boil; when done, drain, sprinkle with salt and shake over a fire until dry and mealy.

Mrs. Panten—Q. Do you prefer to cook meat in a pot or oven?

A. As far as the heat is concerned, there is little difference; but we are accustomed to the roasted scorched taste produced by the dry heat of the oven. Most people consider roasted more savory than that cooked in a pot. Stewed meats, or meats cooked in water just below the boiling point, however, lose less in weight and are much more easily digested.

Dr. Mills—Q. Do you put sugar on porridge?

A. No; sugar here is liable to produce the fermentation spoken of in some of the previous remarks. Porridge alone is an admirable food, and it may be taken with milk; but not sugar and milk. Simple foods are more easily digested than when made complex by the addition of other materials.

Q. Do you believe a straight line of foods will answer for all people in all conditions?

A. No; certainly not. The rations of the United States army may be exceedingly good in our climate, but certainly did not prove so in Cuba. Fat pork is not the proper food for summer, and people living on such diet in a hot climate must necessarily fall ill.

Mrs. Mills—Q. Give a recipe for a good cup of tea?

A. Tea, of course, should be made without boiling. The boiling develops or draws out the tannin. The tea-pot should be scalded. Allow a teaspoonful of tea to a half pint of water; put the tea in the pot; take the water at the first boil, pour it over the tea, cover the pot with a cosy; allow it to stand for five minutes; stir and use.

Dr. Mills—Q. Just wait a moment; I am not through with the porridge. Must the meal be fine or coarse?

A. If you use the Scotch oats, you know it is medium; the grains are slightly cracked, but it is not rolled or crushed; ordinary rolled oatmeal will cook in, perhaps, one hour.

Q. What about pie?

A. Well, it is better to eat the fruit in another way?

Q. Why?

A. Because acid fruits cooked with sugar change both the character of the fruit and the sugar. Even if we use cane sugar it is split into dextrose and levulose by the acid and heat—two new sugars prone to fermentation. The fat and the flour are exceedingly nutritious, each one separate, but when the grains of starch are enveloped with the grease it prevents the direct contact of the starch with the mucous secretions of the mouth and hinders their digestion, so that, besides giving a great deal of extra work, good food is converted into bad.

A Voice—Oh, my, but pies are good.

A. It would be an unwise man, indeed, who would eat pie. (Laughter and applause). It is not the articles used in pastry that are injurious, but it is the combination, especially as the fat is a covering to the starch.

Pantry and kitchen windows when facing the sun let in a great amount of heat during the summer. Blinds, of course, keep out the heat, but they make it dark within. A good plan to overcome this is to put up two stakes about two feet out from the window and a little further apart than the width of the window. Join them at the top with a cross-piece and then put two short pieces across from this to the house, one at each end. The upright stakes should be the height of the top of the window. Over this framework stretch wire netting or string and train morning glories or scarlet runners over it. They will keep out the heat and allow the light to come in.

Manhood.

With child faith dead, and youth dreams gone like mist,
We stand at noon, beneath the blazing sun
Upon life's dusty road, our course half done.

No more we stray through woods where birds hold tryst,
Nor over mountains which the dawn hath kissed;
In glare and heat the race must now be run
On this blank plain, while round us, one by one,

Our friends drop out and urge us to desist.
Then from the brazen sky rings out a voice,

"Faint not, strong souls, quit you like men,
rejoice,

That how like men ye bear the stress and strain,
With eyes unbound seeing life's naked truth,
Gird up your loins, press on with might and main,
And taste a richer wine than that of youth."

Willie—"Pa, what do they make talking machines of?" His father—"The first one was made out of a rib, my son."

Now is the time to be on the lookout for clothes moths. Winter garments should be thoroughly beaten before being laid away.

A servant girl in a Birmingham family was taken to task for over-sleeping herself. "Well, ma'am," she said, "I sleep very slow, and so it takes me a long while to get me night's rest."

GOOD FARM FENCE

should turn all kinds of live stock and even tramps; should expand and contract according to the weather so as always to be tight; should stand all storms—even fire and last indefinitely.

The Coiled Spring Page

Is just such a fence.

Its virtue is attested by the fact that there is more of it in use than all other makes combined. Prices lower than ever this year.

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Let the Children Laugh.

Chavasse, an eminent surgeon says: "Encourage your children to be merry and to laugh aloud. A good, hearty laugh expands the chest and makes the blood

blues away from a dwelling. Merriment is very catching and spreads in a remarkable manner, few being able to resist the contagion. A hearty laugh is delightful harmony. Indeed, it is the best of all music."



Laying Down the Law.

bound merrily along. Commend me to a good laugh, not a little, sniggering laugh, but to one that will sound right through the house. It will not only do your child good, but will be a benefit to all who hear and be an important means of driving the

A worthy Quaker thus wrote: "I expect to pass through this world once. If therefore there is any kindness I can show, or any good thing that I can do to any human being, let me do it now. Let me not defer, nor neglect it. I will not pass this way again."

The Farmer's Daughter.

You should see her
In the kitchen,
Cap and apron
White as snow,
In her eyes
The love-light shining—
On her cheeks
A rosy glow.

Sleeves rolled up
Above white elbows,
Sweeping here
And dusting there,
This fair daughter
Of the farmer,
For the household
Hath a care.

And her song
Is just as tuneful,
And her step
Is just as light,
As when she,
Sweet merry-maker,
Joined her mates
In play last night

Oh, the little
Farmer's daughter,
(Heaven bless her
As she goes.)
She is fairer
Than the lily.
She is sweeter
Than the rose

Story of Lord Aberdeen.

It may not be generally known how Lord Aberdeen met his future wife. "It was about twenty-two years ago, and Lord Aberdeen was visiting at a shooting lodge in the Highlands. One day his host could not accompany him on the moors, so he went alone, and by accident crossed the "march" or boundary, of a neighboring estate. He was tramping along, gun on shoulder, when a gentleman asked him if he was aware that he was trespassing. "Oh, no," said Lord Aberdeen, "I am the guest of so-and-so!" "Very probably," said the gentleman, "but you are now on my property." Lord Aberdeen apologised profusely, and handed him his card. The owner of the soil was Mr. Marjoribanks, now Lord Tweedmouth, who promptly invited the trespasser to luncheon at Guisachan. The unwitting poacher accepted, and in that way met Miss Isobel Marjoribanks, who is now Lady Aberdeen.—The Ladies' Journal.

Lounger: "Do cook books form an important item in your sales?" Bookseller: "Yes, we sell them by the thousand." "The women appreciate them, eh?" "Oh, the women don't buy them; their husbands do."

Those you envy, like as not,
Envy you your job and lot;
Be contented.

"This is the parlor, eh?" asked the real estate man. "Yes," said the father, "but I usually call it the court-room. I've seven daughters, you know."

Be Patient With the Children.

They are such tiny feet!
 They have gone such a little way to meet
 The years which are required to break
 Their steps to evenness and make
 Them go
 More sure and slow.

They are such little hands!
 Be kind—things are so new, and life but
 stands
 A step beyond the doorway. All around
 New day has found
 Such tempting things to shine upon; and so
 The hands are tempted oft, you know.

They are such fond, clear eyes,
 That widen to surprise
 At every turn! They are so often held
 To sun or showers—showers soon dispelled
 By looking in our face.
 Love asks, for such, much grace.

They are such fair, frail gifts!
 Uncertain as the rifts
 Of light that lay along the sky—
 They may not be here by-and-by,
 Give them not only love, but more, above
 And harder—patience with their love.

—Selected.

Sugar as Food.

The U. S. Farmers' Bulletin No. 93, in 26 pages of print, is just to hand, and gives a most interesting account of the nature and uses of sugar. Sugar is diffused through a great many vegetable juices. It is found in the stems and roots of all the grasses, especially in sugar cane and sorghum, in fleshy roots such as beets, carrots and sweet potatoes, in the sap of trees such as the date palm and sugar maple, in nearly all sweet fruits and in the nectar of flowers; but in very few of them is cane sugar found in such quantities as to make it profitable to separate the sugar from the other substances which those juices hold in solution.

The sugar cane is a gigantic grass, native to China and Eastern India, and sugar was known there many centuries before it was known in Europe. When the cane was brought west and cultivated in North Africa and the West Indies it was used only by well-to-do people. Fifty years ago the dawn of the beet sugar industry began in Germany. Now two-thirds of the world's sugar is made from beets. Raw sugar from the cane contains 93 per cent of pure sugar, from beets 1 per cent less. From whatever source the raw sugar comes, no chemical test can detect any difference in the refined sugar made from them. The idea that beet sugar has less sweetening power than that from cane, or is less fit for preserving, has no clear proof. Loaf sugar is, as a rule, "chemically pure," and is perhaps the purest of all substances in commerce. Of 500 specimens tested by the Department not one was found adulterated.

The chief practical interest in sugar lies in its food value. Within certain limits we may look on sugar as the equivalent of starch that has been digested and made ready for absorption. A mealy potato or a lump of laundry starch is very much akin to sugar and a potato must be turned into a kind of sugar by digestion before it can be absorbed as food in the animal system. Starch furnishes a considerable part of the heat and force of the body. When digested it reaches the blood as a form of sugar, which can be burned to produce heat and muscular energy, and this is just what straight sugar does. When a special call is to be made on the system for nerve force sugar is a much readier source of power than starchy foods, because they require longer time for their digestion. It is only from nitrogenous foods that muscle can be made, but to make muscle effective

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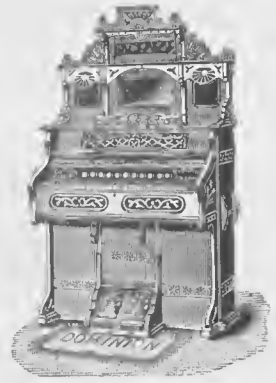


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carbonaceous food is indispensable and sugar is one of its simplest and most available forms.

For the last six years some of the ablest scientific investigators have been working along this line of investigation. One of them found by repeated tests that by using three or four ounces of sugar the natural sense of fatigue was staved off and work went on as briskly as ever. The practical conclusion drawn was that sugar in small doses is well adapted to help the user to perform extraordinary muscular labor.

During the autumn manoeuvres of the German army a 38-day test was made, which proved that not only was the sugar, one-sixth of a pound daily, relished by the men, but that on long marches it appeased hunger and thirst and allayed the sense of fatigue, helping the tired man on his way. Milk sugar is a valuable element in the food of infants, and on this continent sugar is much relished by men engaged in the severest forms of manual labor. From the lumbermen of Canada to the negro in the Alabama cane plantation sugar in some form is part of almost every meal, and these latest scientific and practical experiments only go to confirm what in other ways practical every-day workers have acted on. Men in training for severe efforts are now using sugar freely with this in view, and the Swiss mountaineer depends greatly on sugar and highly sweetened chocolate.

That sugar is very fattening to man and beast has long been well known. A century ago a medical man wrote: "I have often seen old scabby, wasted negroes crawl out from their hovels into the cane fields in crop time and by sucking the canes all day long they soon became strong, fat and sleek."

There is a risk of children having their appetites perverted by the excessive use of what is in itself quite proper, and grown-

up people will make the same mistake. A simple pudding, sweetened with sugar is wholesome, but when grease is added in the shape of pies and doughnuts, it requires severe exertion in the open air to use them with impunity. In American cookery sugar is used along with too many other kinds of food in such ways as to injure digestion. Corpulent people should use little or no sugar, and sugar in excess will certainly be harmful to all people who have weak digestion and little exercise. The chemistry of digestion agrees with every-day experience that simple food in its simplest forms is most conducive to permanent good health and sound digestion, and this rule holds good with sugar in all its dietetic applications.

In testing eggs, remember that a good egg will sink and a bad egg will swim; if it is difficult to remember which is which, just stop to think that a fresh egg sinks because of the water in its own composition.

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What to Live for.

Dear little people I love so well,
Wherever your place may be;
There's a beautiful secret I long to tell,
So come and listen to me.

When I was a child in a little town,
Oh, ever so far away,
A beautiful spirit came floating down,
And whispered to me one day:

"There's a secret," the beautiful spirit said,
"That even a child may know,
And they who know it are gladly led
Wherever their feet may go.

So sweet and simple the secret is,
Yet people are slow to learn,
And away from the pathway that leads to
bliss
Their lingering faces turn.

So the little children must show them how
The happier way to choose,
For the hearts that are tender and loving
now
Will never the lesson lose.

And this is the beautiful secret: Live
For nothing but love each day—
Not for love to keep, but for love to give—
For ever to give away.

There is no life upon earth so poor
But love it may give full well,
And the joy of giving is deep and sure,
And richer than tongue can tell.

To sweeten life as we meet and part,
We need but remember this:
To carry always a tender heart
For the lowliest thing that is.

The wider the circle of love we make,
The happier life we live,
And the more we give for another's sake,
The more we shall have to give.

So let us widen it day by day,
By loving a little more,
Till nothing living be shut away
From a share in the heavenly store.

'Tis love and kindness alone can fill
Our hearts with the joy of living;
And ages wait but to do the will
Of the loving and the giving."

—Allison G. Derring.

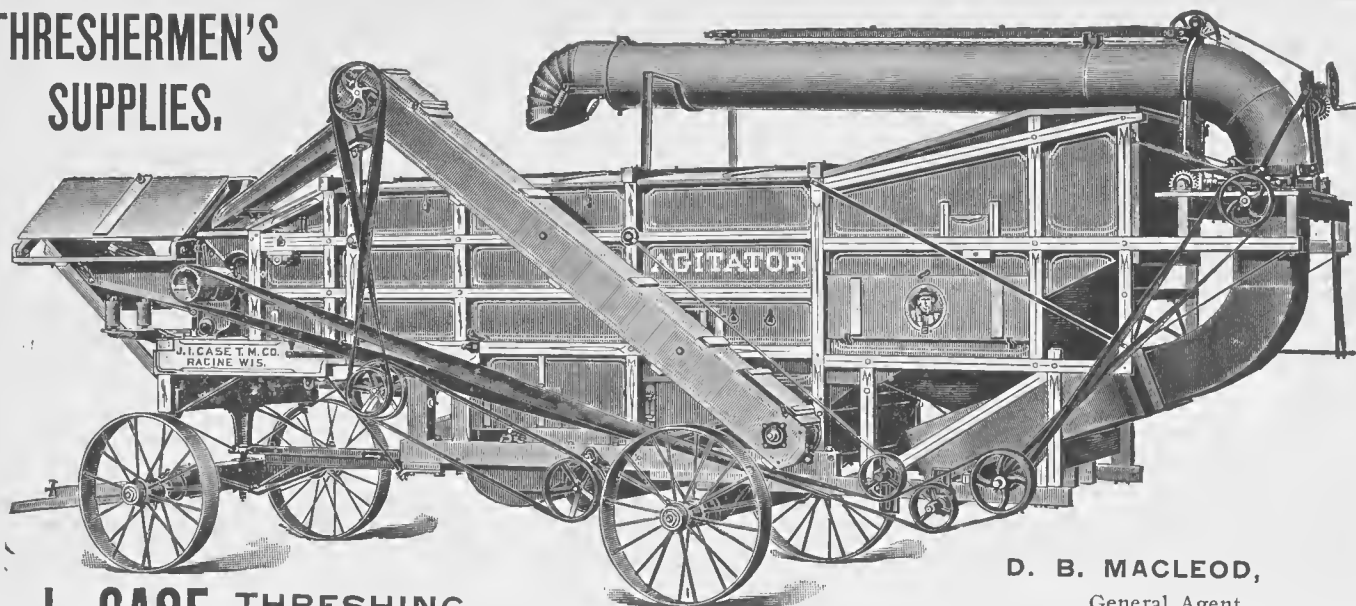
For Blood Will Tell.

It was rapidly growing dusk on the wide prairie, and the stars were just beginning to show like glittering diamond points. Just the suggestion of the autumn was in the cool night air. The stillness, as Jim and Miss Waring drove along over the silent plain, was broken now and then by a sharp, startling rattle, a sound once heard never to be forgotten, the danger signal of the deadly rattlesnake coiled up in the long, brown grass. "Hit appears to me," Jim was saying, "that that 'ere wind don't bode any good to the settlers' around these parts." "Why so, Jim?" "Guess you hain't ever been on one of our Dakoty perairies afore, Miss Waring, or you wouldn't have asked such a question. There's two things out hyar that's more feared than Old Nick himself; one on 'em's a perairie fire, and another's a perairie with the wind ablowin' a forty-mile-an-hour gale." They rode on again in silence. Agnes Waring had come from the far great city to visit her brother on his western ranch. Jim, the man of all work, was driving her out from the station, fifteen miles from the ranch. "By the long-horned spoons!" said Jim, suddenly, rising in his seat and stopping the horses with a tremendous jerk, "look over there, will you? Thar's business for us, sure's you're a foot high. Git up there," he yelled to the horses, and, giving one of them a stinging blow with his whip, they sprang into a run. Across the level plain shone a light, the light at the ranch headquarters, nearly a mile away. To the left of it a dull, reddish glow had come up and now and then, at the horizon line, where the darker part of the sky was lost in the prairie, sharp flames were darting up. "Don't be skeered," Jim ejaculated, as he whipped the horses into a yet more furious pace. "There ain't no danger—leastwise, for us." Alice was a self-possessed city girl, with a generous stock of old-fashioned common sense; but she was startled at Jim's actions, and her face had grown pale. "Everything's all right," said Jim, as reassuringly as he could under the circumstances; don't you be skeered." He had seized the reins between his firm, strong teeth, and now with one hand, now with the other, now with both, he was whipping the horses into still greater speed. "Hate—ter—lick a team—like—this," as the wagon bounced and rattled along; "hate ter do it—but—hit can't be helped—when there's life—depends—on it." A few mo-

ments more, and the horses dashed up to the big ranch headquarters house. Jim threw the lines to the ground, and, seizing Alice by the waist, jumped out with her. "Sorry to be so imperlite, but there ain't any time to wait. Kin you ride horse-back?" Barely waiting for an affirmative answer from the girl, who was passionately fond of riding, and who modestly held the gold medal for horsemanship in her city riding club, Jim ran to the barn, flung a man's saddle on a beautiful horse, and before Alice had time to recover from her surprise at this novel introduction to her brother's establishment, the horse was before her. "You say you kin ride; waal, here's the best chance to show hit you ever had in your life. Thar's the best hoss in McLeod County—racin' blood for five generations; there ain't nothin' but a perairie fire kin ketch him. Jump him, Miss Waring; ride straight toward the fire yonder. Thar ain't no danger now till you git ter Mule Creek. Jest over the crick, a quarter mile or so, thar's a Russian woman and her six weeks' old baby. She's all alone, for I saw her husband in town when we left. They ain't back-fired an inch, and you've got to git the woman and her baby over the crick. See? I'd go myself, but the wind is shiftn' and this hull ranch'll be in danger afore long. You'll pass your brother and a parcel o' men backfirin' along the line; don't stop for any explanations, but ride for the crick, and ride as if Old Harry was on your track. You been't afeered, be you?" The blood had come to the pale cheeks. "You say there's little danger of my losing my life, Jim?" "Not a bit—ef you only git that woman across the crick in time; but don't wait—jump quick, fer the Lord's sake, or you'll be too late." With a rude toss he threw her into the saddle as if she had been a child, and handed her the reins. As he did so, he thrust a short, cruel rawhide into her hand. "Don't hit him with that unless you have to—he's never been licked in his life; but he can outrun a cyclone. Ef you have ter lick him, give it to him red-hot!" It is long, sometimes, before a horse and its rider become acquainted with one another, but it seemed but a few seconds to Alice before she and the noble animal were old friends. Jim was right; Prince Hal could run; and after the first few tremendous jumps and Alice had steadied herself in the saddle, the thrilling excitement stirred her blood like an intoxicant, and she realized that Jim had told the truth; it promised to be the race of her life. "Jeho-sa-phat!" exclaimed a man who was

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plowing a fire furrow along the edge of a ranch where the men were at work. "Mr. Waring, look, will you! Look at Prince Hal!" Mr. Waring had no more than time to look up before he saw his choicest mount pass by him like the wind, a girl, with hair flying behind her, on his back, the horse going at a pace that not his fastest Kentucky ancestor ever matched. On the horse went, as if he, too, knew of the life-saving mission of the hour. The foam came from his teeth, and his flanks were white. Alice leaned forward in the saddle as she urged him on, and stroked his neck. A moment more they were at the creek, a shallow stream. Beyond, Alice could see a low house silhouetted against a great red bank of flame. The fire was coming. Already she could feel the intense heat. A leap and a bound; they were over the stream and on again with still swifter flight. It was a matter of seconds now until the low sod house was reached. In front of it was the Russian peasant woman, frantically trying to save some of her household goods by dragging them with one hand further from the course of the fire, while in one arm she clutched the baby, around which she had thrown a wet shawl to protect it from the heat. "Why don't you run?" cried Alice, as she jumped from the horse. "Don't you see the fire is almost on you? You can't save your things; run for the creek! Run, I say, or you'll be burned to death!" Alice caught the child from the woman's arms, and sprang up into the saddle as best she could. The woman stood as stupefied, the red glow from the flames lighting up her stolid face. The fire was coming on faster now; they could hear the roar and crackle as it swept through the long man-high grass of the swale beyond the fence. "Quick! quick, I say! No, you can't run fast enough now to get to the creek; jump up behind me. Quick, quick, or we shall all be burned. I can't leave you here to die!" The woman's stolid nature was aroused at last by the animal fear of danger, and, while the heat grew more intense every minute, she clambered up behind Alice. Prince Hal's face was towards the fire. He had not moved since he reached the spot; he seemed like some beautiful statue, his body motionless, his ears sharp, erect, his nostrils distended; the awful fascination of the fire was upon him. Alice pulled at the bit to turn him. He paid no attention. She spoke sharply, but he only moved uneasily; he would not stir from the spot. Swifter than an electric shock came the thought to her mind that horses in burning buildings would stay and die in the flames before they would be led out. It would be im-

possible to reach the creek on foot; in half a minute more the flames would be on them. Snatching the wet shawl from the baby with one hand and swinging the child backward to its mother with the other, she threw the shawl over the horse's head.

The sight of the fire shut out he quivered, turned as the bit gave him a sharp twist, and just as the flames were leaping over the sheds hard by the house he sprang away. It was a race for life now — for three lives; for the wind had increased to a gale, and there is nothing more terrible in this world than such a relentless ocean of flame as was rolling over the grass-grown plain. Alice thought of Jim's parting advice: "He's never been licked in his life, but if you have ter, lick him, give it to him red-hot!" With a sharp cry, urging the horse on under his heavy burden, she struck him with all her strength on the quivering flank, not once, but many times. He jumped as if stung by a rattlesnake, and, seizing the bit in his teeth, sprang away as if shot from some mighty catapult. Alice had lost all control of him now. She could neither guide nor check nor urge him. The blood of a noble ancestry, the blood of a racer was on fire in his veins. Down the short hill, over the brook, up the further side, on over the plain like some wild spirit of the night he ran. A cheer that you could have heard a mile, and that, mayhap, was heard clear up to the stars of heaven, rang out as Prince Hal, white with foam, flew by the crowd of men. "Wa'al, ef you ain't the pluckiest gal!" said Jim, as he helped Alice from the saddle; "an' you ain't agoin' ter faint, nuther; I can tell it by your eye. Didn't I tell you he could outrun a cyclone? But there had ter be somebody a-top o' him who knew how ter ride."—Independent.

Household Hints.

Flour should always be kept in a cool, dry place.

Rice has a finer flavor, if washed in hot water instead of cold, before cooking.

The smaller a roast of meat, the hotter should be the oven at first, that the least possible amount of its delicate juice may escape.

The small paper bags that fine groceries come in are a better protection to the hand than the gloves made purposely for blacking stoves.

A neatly covered board, broader at one end than the other can be easily put through the sleeves of wash shirt waists, and is a decided help in ironing.

A whisk broom is just the thing to clean a horse-radish grater.

Soda water will clean ceilings discolored by fumes from a lamp.

Coral can be cleaned by soaking it for some hours in soda and water.

Eggs can be used as a substitute for paste or mucilage to seal a letter or a jar of jelly.

A mixture of rain water and soda eradicates machine greases from washable materials.

The white of an egg beaten and swallowed will dislodge a fish bone from the throat.

Half a dozen eggs given immediately after an emetic will render corrosive sublimates harmless.

The white of an egg will allay the smart of a burn if bound upon it immediately, excluding the air.

When a mustard plaster is mixed with the white of an egg, instead of water, no blister will follow its application.

Another test of a thoroughly fresh egg is the distinctness with which the yolk may be seen when the egg is held up to the light.

Make a "swab" to grease bread and cake pans with, instead of using the hands. The greasing will be more thoroughly done and done easier.

Canned vegetables, like canned fruit, are improved in flavor by standing open two or more hours, to restore the oxygen that was eliminated in cooking.

A small, strong table, with castors, that can be run back and forth between kitchen and pantry, saves innumerable steps and any amount of time and patience.

A good face wash to prevent wrinkles is 200 grains of rose water, 50 grains of almond cream, 5 grains of sulphate of alum. Dissolve and bottle for use.

A very simple remedy to whiten and soften the hands is made of two teaspoonfuls of lemon juice, one of glycerine, one of colorless almond oil and a few drops of the triple extract of violets.

Steel knives in use but occasionally can be kept from rust by dipping them in strong soda water, three parts soda to one of water; wiped dry, rolled or placed in a specially-made flannel bag, and kept in a dry place.

Discolored lamp chimneys should be put on the stove in cold water and soda to boil. Then remove the saucepan, and when the water is perfectly cold take out the glass, and the stains will easily come off with the aid of a lamp brush.